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A compendium of the Ornithology of Great Britain

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A COMPENDIUM
OF THE
ORNITHOLOGY

OF
GREAT BRITAIN

WITH A REFERENCE TO THE
ANATOMY AND PHYSIOLOGY OF
BIRDS.

BY JOHN ATKINSON, F.L.S.

MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN LONDON, &c.
CURATOR OF THE MUSEUM, AND LIBRARIAN TO THE PHILOSOPHICAL AND
LITERARY SOCIETY AT LEEDS.

“*Milvus in coelo cognovit tempus suum : turtur, et
hirundo, et ciconia custodierunt tempus adventus
sui.*”

JER. —

LONDON:

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ROBINSON AND CO. LEEDS.

1820.

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OF THE
PRACTICE
OF ORNITHOLOGY

OF GREAT BRITAIN
WITH A REFERENCE TO THE
ANATOMY AND PHYSIOLOGY OF
BIRDS.

BY JOHN ATKINSON, M.D.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS IN LONDON; ESQ.
FELLOW OF THE MUSEUM, AND A MEMBER TO THE PHILOSOPHICAL AND
LITERARY SOCIETY AT LEEDS.

"Miles in celo cognovit tempus anni : tunc et
hinc, et cunctis custodiant tempus adventus
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1820.

PREFACE.

IN the present enlightened era, the study of Natural History is so generally appreciated as to require little in its commendation or defence. It forms the basis of the most interesting and useful researches, and is connected in a greater or less degree with almost every pursuit of philosophy.

But independently of its importance in augmenting the store of our knowledge, and elucidating other branches of science, it is highly advantageous in affording intellectual employment of an innocent and useful kind. The powers of the mind become torpid without stimulus, and decay without employment. And to those, whose situation and rank in life preclude the necessity of ordinary business, the researches of nature afford mental excitement combined with interest and delight. Unlike the gratifications of the sensualist and the dissipations of the gay, its pleasures are rational and pure. It leaves no painful remembrance, it induces no feelings of remorse; its effects are neither the ruin of bodily health, nor the depravation

of moral character. The procuring of animals and birds, the search for plants and insects, require exercise in the open air, and while they call into action the powers of the body, agreeably interest those of the mind; "*labor ipse voluptas.*"

The cultivated mind is ever active. If it find not employment suitable to its high capacity and noble design, it either sinks into low and frivolous pursuits, or becomes the prey of evil passions, and the engine of mischief and disorder. The world at present presents, alas! too many instances of perverted genius.

On the youthful character the impress of right habits is peculiarly important; for the mind embrued, when rising into activity, with just principles, and directed to useful pursuits, rarely becomes the residence of vice and error.

Natural History communicates to its votaries, a love of order; it expands while it directs the energies of the mind; it opens a field of pious contemplation,—manifesting at every step, the glorious attributes of Him, whose wisdom and goodness are discernible, not less in the structure of an insect's limb and the formation of a feather, than in the majestic power of the "half-reasoning elephant."

Of the pursuits of Natural History, Ornithology is not the least interesting; the varieties, dispositions and habits of the feathered tribes, especially when their anatomical structure is also regarded, afford abundant matter for our entertainment and instruction.

It has been regretted that the want of a concise system of British Ornithology has prevented the diffusion of these advantages. The works on this subject, though highly valuable in themselves, are too expensive for every one to procure,—and so voluminous as to discourage those whom we should invite, and appal the student with images of difficulty and labour, when we should cheer his efforts, and smooth his approach.

The intention of the author, in forming this compendium, was to collect the information scattered through extensive treatises, and the transactions of learned societies,—to state the species which have been recently discovered,—and to correct those errors in synonyma, which the difference of feather in different ages, or at certain times in the year, has frequently produced. Far, therefore, from aspiring to supersede the standard works, he trusts his synopsis will facilitate their study.

From the writings of Shaw, Montagu, Pen-

nant, Latham and Bewick, he has often drawn his descriptions ; but in almost every instance, diligently compared them with specimens in his own cabinet, or those of his friends. The details of authors, however, the concise plan of his compendium has often obliged him to abridge ; yet he is not aware of having ever omitted the characteristic of a species.

Besides the external appearance, this synopsis will be found to contain anatomical remarks. A great proportion of the British birds have been accurately examined by the author as to their internal structure, while others were dissected in the Orkney Islands by well informed assistants, sent for the purpose of procuring specimens. The habits of several species these gentlemen also ascertained, and some were kept alive under the author's inspection.

Among his obligations to friends for the inspection of their cabinets and their useful communications, the author desires particularly to acknowledge several valuable notes, which are communicated under the signature W.

Park Square, Leeds,

July, 1820.

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LINNÆAN CLASS SECOND.

AVES.

BODY COVERED WITH FEATHERS; LUNGS PLACED NEAR THE BACK-BONE,—THE BIRD VOLUNTARILY FILLING WITH AIR, NUMEROUS CELLS, DISTRIBUTED THROUGH THE BODY AND HOLLOW BONES.

DIVISION I.—LAND BIRDS.

ORDER I. ACCIPITRES.

Birds of prey, bill and claws strong, hooked; body muscular; female larger than the male.

Stomach thin, and muscular fibres small (commonly called a membranous stomach,) possessing the power of disgorging innutritious matter, such as fur, bones, and feathers.

Carnivorous; digestion* effected by the gastric juice alone; intestines short.

* The organ of digestion in birds consists of two parts. The upper extremity of the stomach, or rather termination of the Œsophagus, is surrounded with a zone of glands for the secretion of the gastric fluid, and is called *Bulbus Glandulosus*: the lower part, or digesting stomach, is furnished either with a thin muscular coat, as in the *Accipitres*,—with a thick muscle, denominated gizzard, as in the swan,—or with a structure of an intermediate kind as in the *Guillemot*.

GENUS I.

FALCO.

Beak hooked, furnished with a wax-like membrane or cere, tongue bifid.

1. CHRYSÆTOS. GOLDEN EAGLE.

F. Fusco-ferrugineus, rostro plumbeo cera, pedibusque flavis, cauda basi cinereo undulata. Shaw's Zoology.

Bill bluish-black; cere and legs yellow, feathered to the toes. Irides hazel.* Plumage dark brown; the feathers of the head and neck are long and narrow, bordered with tawny; quill feathers chocolate brown; tail deep brown, dashed with ash colour, and white at the roots.

Weight 12lbs. length $3\frac{1}{2}$ feet, breadth 8 feet. It breeds in Scotland,—but rare, eggs 3 or 4 white.

* The colour of the iris in birds, in a state of nature is in general a permanent character. There are, however, some exceptions which have led to confusion. In the genus Falco several instances have occurred where the same species has been described with the iris dark grey, or golden yellow. Chrysætos is usually described as golden, which appears to be the case in young birds. See *Werner. Trans. vol. 2.* In domestic fowls, &c. the iris appears to vary almost equally with the plumage.

2. OSSIFRAGUS. SEA EAGLE.

F. Fusco-ferrugineus, cruribus seminudis flavis, rectricibus albo-nebulosis. Shaw.

Bill bluish black; cere, sides of the mouth and orbits yellow. Irides hazel.* The feathers on the head and neck are long and dusky, brown at the ends, tawny towards the base, and white at the roots; the whole body dark brown, intermixed with rust colour; the tail and its coverts mottled with yellowish white, dark and faint ash-coloured brown; the quills are of a dark chocolate colour; the shafts white towards the base; the legs strong and yellow, feathered very little below the knee; the claws black; the inner one two inches long, much hooked. *Montagu's Ornithological Dictionary.*

Its prey is principally fish. Scotland and Ireland.

* Several peculiarities are found in the eyes of birds; two of them tending to facilitate the change upon which the adjustment of the eye to different distances depends, the one is a bony, yet in most species a flexible rim or hoop, surrounding the broadest part of the eye, which confining the action of the muscles to that part, increases the effect of their lateral pressure upon the orb, by which pressure its axis is elongated for the purpose of looking at very near objects, the other is, an additional muscle, called the Marsupium (or Pecten) to draw upon occasion the crystalline lens back, and fit the same eye for the viewing of very distant objects. *Paley's Nat. Theology.*

Cuvier is of opinion that *Albicilla* and *Ossifragus* are not distinct species.

A living specimen procured from the Orkneys, is a noisy and furious creature, and barks when irritated like a cur dog.

3. FULVUS. RING-TAIL EAGLE. BLACK EAGLE, OF BR. ZOOLOGY.

F. Nigro-ferrugineus, cera flava, cruribus plumosis, digitis flavis, cauda fascia alba. Shaw.

Bill bluish-horn colour, with a black tip, cere yellow. Irides hazel, head and neck brownish-black, mixed with rust-colour. Feathers on the lower part of the back of the neck, of a ferruginous white colour at their extremities. Chin, throat, head, and belly black; some of the feathers tinged with brown towards the base. Back scapulars, and primary and secondary quill feathers, black. Lesser wing coverts, black and blackish-brown, mixed with hair brown. Greater wing coverts, brownish-black. *Tail perfectly white for two-thirds of its length, and black at its extremity.* Feet yellow, feathered to the toes.

It is about the size of the golden eagle, and preys upon hares and young deer.

This species also breeds in the Orkneys, and our specimen taken there in spring 1819, greatly resembles in its voice a young turkey.

It is a commonly received opinion that birds of

prey never drink ; on the contrary, however, we have remarked both *Ossifragus* and this species, to be fond of water, and not merely to sip like other birds, but to take a continued draught. Our living specimens not unfrequently bathe, by plunging over head in a large tub of water, provided for that purpose.

In August, 1816, two young birds of this species, were to be seen at the inn, at Dalwhinne, Highlands, Scotland, near to which place they were taken from the nest. *W.*

4. ALBICILLA. CINEREOUS EAGLE, GREAT ERNE, OR WHITE TAILED EAGLE.

F. Fusco-cinereus, capite colloque canis, cauda alba.
Shaw.

The bill, cere, irides,* and legs, are pale-yellow,

* The nictitating membrane, which birds possess for the purpose of moistening the eye, defending it from injuries, and particularly for excluding excessive light, is situated at the upper part of the inner canthus of the eye ; it is semi-transparent and elastic, and is drawn over the whole anterior part of that organ by two muscles, the quadratus and pyramidalis ; on the birds ceasing to exert those agents, it recedes by its own elasticity.

Would it not be better for authors to confine the name *Membrana nictitans* to the *semi-transparent* and *elastic* membrane possessed by birds, and term the process of the conjunctiva, found in many Mammalia, *Palpebra tertia* only : and to the still smaller doubling in the human eye, keep to the general anatomical name *Valvula semilunaris* ?

The external eyelids in birds, are chiefly closed by the elevation of the lower one,

the space between the beak and the eye is bare, the head and neck ash colour; the body dark brown, breast irregularly marked with white spots; the tail is white.

Weight 7lb. 6oz. length 2 feet, 8½ inches, breadth 6½ feet.

Found in Scotland and the Orkney islands, where it preys upon fish, animals, and aquatic birds.

5. HALIÆTUS. OSPREY. BALD BUZZARD.

F. Supra fuscus, subtus albus, capite albido, cera pedibusque cæruleis. Shaw.

The bill is black; the cere blue; irides yellow; crown white spotted with dusky; the back is brown, the breast and belly white, spotted with brown; the two middle tail feathers are brown, the others are marked on the inner webs, with alternate bars of brown and white; legs short, and thick, and of a pale blue colour.

Var: a white spot on the wing; breast spotted with dull yellow.—*Pennant.*

Weight 4 or 5lb. length 2 feet.

It feeds on fish. When seizing its prey, it utters a loud scream.

The female lays three or four eggs, in a nest generally formed of reeds, &c. and placed on the ground.

6. BUTEO. COMMON BUZZARD. PUTTOCK.

F. Supra fusco ferrugineoque subtus albo ferrugineoque varius, cera pedibusque luteis, cauda fusco fasciata. Shaw.

The bill is lead colour, the cere, feet, and irides are pale yellow. Plumage, above ferruginous brown, beneath, yellowish white, spotted with brown; the tail is barred with black and ash colour, and tipped with brownish white. Weight 28oz. length 22 inches.

Varies much in colour, irides sometimes grey.

The buzzard feeds on the smaller birds, mice, and frogs; but never pursues its prey on the wing.

The nest is constructed with small branches of trees, and lined with wool; the female lays two or three dirty white eggs, spotted with rust colour.

Montagu observes that the more generous hawks kill their prey by eating the head first; while the cowardly species, especially Buzzards, begin eating indiscriminately any part of their prey.

Our specimens, in a domestic state, were observed to hide their food when satisfied, like the magpie.

7. APIVORUS, LIN. Fem. }
 ALBIDUS, GMELIN. Mas. } HONEY BUZZARD.

Wer. Trans. vol. 2. 575.

*F. Fuscus, alis cinereo fasciatis, subtus albus fasciis
 subferrugineis transversis.* Shaw.

The bill is black : cere and irides are yellow ; the head is ash colour ; the upper parts are dark brown, the under parts white, spotted, or barred with rusty brown, on the breast and belly ; the tail is brown, marked with three broad dusky bars, between each of which, are two or three of the same colour, but narrower ; the legs are stout and short, of a dull yellow colour. *Berwick.*

Weight 1lb. 10oz. length 23 inches, breadth 4 feet.

The nest of the honey buzzard is constructed of small branches, lined with wool, &c. It often, however, like the common buzzard, contents itself with the deserted nest of some other bird.

The female lays eggs of a dirty white, blotted with rust colour. It feeds its young with the maggots of wasps and bees ; and pieces of honey-comb are said to be often found in its nest.

8 ÆRUGINOSUS. MOOR-BUZZARD, OR DUCK-HAWK.

F. Fuscus, vertice luteo, cera pedibusque flavis.
Shaw.

The bill is black ; the cere and irides are yellow ; the crown is yellowish white, lightly tinged with brown ; the throat is light rust colour ; the rest of the plumage is reddish brown, with pale edges ; the greater wing coverts are tipped with white ; the legs are yellow, the claws black. *Bewick.*

Var : the whole chocolate brown, with a tinge of rust colour. *Latham.*

Weight 28oz.

The moor-buzzard preys upon rabbits, water fowl, and reptiles.

It builds its nest upon the ground, among long grass or rushes, and lays 3 or 4 whitish eggs, spotted with dusky.

9. PALUMBARIUS. }
GENTILIS. Syn. } GOS-HAWK.

F. Fuscus fascia superciliari alba, subtus albus lineis transversis fuscis. Shaw.

The bill is blue, black at the tip ; the cere is yellow-green ; irides yellow ; the head, the hind part of the neck, back, and wings are deep brown ; over the eye is a white line, and a broken patch of the same

colour on the side of the neck ; the breast and belly are marked with numerous transverse bars of black and white ; the tail is long, ash coloured, with 4 or 5 dusky bars ; the legs are yellow, claws black. *Montagu.*

Length 22 inches.

It is found in Scotland, where it breeds on the top of high trees, its prey is game ; the female lays 4 white eggs.

10. MILVUS. KITE OR GLEAD.

F. Fusco ferrugineoque varius, capite albido fusco striato, cauda ferruginea forficata. Shaw.

The bill is yellowish : the cere and irides light yellow. The head feathers are long and narrow, of a grey colour, streaked down the middle with dusky ; the body is reddish brown, the margin of each feather pale ; the quills are dark brown ; the tail very much *forked* ; the legs are yellow, the claws black.

The kite flies remarkably steady.

Weight 2lb. 6oz. length above 2 feet.

The nest is formed of sticks, and lined with wool, rags, and the like.

The female lays 3 or 4 dirty white eggs, spotted with rust, at the larger end.

11. PEREGRINUS. } PEREGRINE, FALCON,
 LANARIUS. Syn. } OR LANNER.

F. Supra plumbeus, fusco fasciatus, subtus albo-flaves-
cens striis maculisque fuscis. Shaw.

The bill is short and strong, blue at the base, black at the point; cere yellow, in some greenish; irides are dusky. Plumage cinereous blue; the back, scapulars, and wing coverts, obscurely barred; the throat and upper breast are yellowish white, the latter marked with a few streaks; the lower breast, belly, and vent white, crossed with pointed dusky streaks; the quills dusky, with white spots on the inner webs; the tail is barred alternately with cinereous-blue and black; the legs are short, strong, and yellow; the toes long; claws black, strong, and very much hooked. *Montagu.*

Length $16\frac{1}{2}$ inches, breath 37 inches.

This species varies much, according to age. It breeds in Scotland and Cumberland.

12. VERSICOLOR. } SPOTTED FALCON.
 COMMUNIS. SHAW. }

F. Fuscis rufo undulatus, cauda subnigro fasciata,
pectore abdomineque albidis fusco maculatis.
 Shaw.

The bill is black; cere yellow; irides pale yellow. The crown of the head, and hind part of the neck are

white, spotted with light reddish brown, the back and scapulars the same, edged with white; the quill feathers are dusky, barred with ash colour; the under side of the neck, breast, belly, thighs, and rump are white, on the two first are a few rust coloured spots; the middle feathers of the tail are barred with white and deep brown; the others with light and darker brown; the legs are strong.

The size of the buzzard. *Pennant.*

13. LAGOPUS. ROUGH LEGGED FALCON.

F. Albus fusco varius, pedibus pennatis, cauda versus apicem fascia lata fusca. Shaw.

The bill is dusky; the cere and irides yellow. The head, neck, and breast are yellowish white, streaked with brown; the belly is dusky brown, the scapulars and wing coverts are blotched with dusky brown; the former mixed with yellowish white, the latter inclining to ferruginous; the quill feathers are white at the base, dusky at the ends, the outer webs dashed with cinereous, the shafts are white; the tail is brown one third from the end, across which are two faint bars of dusky black; the rest white, with a few spots across the upper part, resembling a broken bar of brown, the tip white; the upper tail coverts are white, streaked with brown; the legs are covered with pale dull yellow feathers down to the feet, spotted with brown; the thighs the same; the feet yellow, the claws black. *Montagu.*

14. ISLANDICUS. }
 GYRFALCO. SHAW. } ICELAND FALCON.

F. Fuscus, subalbido variatus, subtus albidus maculis fuscis, cauda fasciis numerosis fuscis. Shaw.

The bill is much hooked, yellow; irides dusky; the plumage is white, marked with dusky lines and spots; the breast and belly are marked with lines pointing downwards; the wings are marked with large heart-shaped spots; the legs are pale blue, and feathered below the knees.

Var: white, or brown above, and white below.

This species rarely visits Scotland and the Orkneys.

It will attack the largest birds.

15. CYANEUS. Mas. HEN-HARRIER.

PYGARGUS. Fem. RING-TAIL.

F. Albo-cærulescens, collari subrigente albo fuscoque vario, remigibus fuscis. Shaw.

Male. The bill is black, covered with bristly feathers at the base; the cere, irides and edges of the bill yellow; the upper parts are bluish grey, mixed with light tinges of rusty; the breast and under coverts of the wings are white, the former marked with rust coloured streaks, the latter with bars of the same colour. The greater quills are black, the secondaries and lesser quills are ash-coloured; the two middle

tail feathers are grey, the other three are marked on the inner webs, with dusky bars, the two outermost are marked with alternate bars of white and rust colour; the legs are very long, slender, and yellow. *Bewick.*

Weight 13oz. length $18\frac{1}{2}$ inches.

Lin. Trans. vol. 9. p. 182.

Female. The bill is black; the cere, irides, and legs are yellow; the upper parts dusky; the breast, belly, and thighs, are yellowish brown, marked with dusky oblong spots; the rump is white; from the back of the head, behind the eyes to the throat, there is a line of whitish coloured feathers, forming a collar or wreath; under each eye there is a white spot, the tail is long, and marked with alternate brown and dusky bars. *Bewick.*

A female in our possession, was shot on the moors above Stanhope, county of Durham, just as it had struck a moor poult. *W.*

16. TINNUNCULUS. KESTREL OR WINDHOVER.

F. Ferrugineus nigro maculatus, capite caudaque (maris) canis, hac fascia subterminali nigra.
Shaw.

Male. The bill is lead colour; irides large, dusky; the crown of the head is light grey; the tail the same with a black bar, the tip is white; the upper parts are lighter spotted with black; the legs are yellow.

Weight 7oz. length 13 inches.

Female. It is larger than the male; the head and tail are of the same colour as the back, it is less bright than the male, and the tail feathers are marked with dusky bars, a broad one near the end.

It breeds in hollow trees, and lays 4 or 5 pale reddish eggs.

Its food is birds, mice, and reptiles.

Our tame specimens, having their wings cut to prevent escape, exhibited great adroitness in climbing the trunk of a tree.

17. NISUS. SPARROW HAWK.

F. Griseo-fuscus, subtus albidus fusco undulatus, cauda nigro fasciata apice alba. Shaw.

The bill is bluish black; the cere yellow; the irides are bright orange-yellow; the plumage is bluish grey, or brown, edged with ferruginous; the under parts tawny white, waved with brown; the tail is ash-coloured, barred with dusky black, the tip whitish; the legs are long and slender.

The sparrow hawk seldom makes a nest, but takes possession of a deserted one.

The female lays 4 or 5 dirty white eggs, blotched with rust colour.

The middle toe in this species, as well as in some others, is remarkably long, and admirably calculated to seize and hold birds, which, we should suppose, much too large for their prey.

18. SUBBUTEO. HOBBY.

F. Subcaeruleo nigricans, subtus albus maculis oblongis fuscis, genis utrinque macula descendente nigra.
Shaw.

The bill is blue; the cere and orbits yellow; the irides orange, (*Bewick*) dusky, (*Montagu*) the head and upper parts dark dusky brown, almost black, and dashed with ash colour; the feathers margined with pale rufous brown; over the eye is a light stroke; beneath the eye a black patch, extending in a point from the upper mandible, down each side of the throat; the chin and throat are white; the breast, belly, thighs, and under tail coverts are ferruginous, palest on the former, marked with dusky streaks; the tail is like the back, barred on the inner webs with rust colour, except the middle feathers; tip whitish, the legs are yellow, the claws black. *Montagu.*

Length 12 inches, weight 7oz.

The hobby breeds in England, and migrates in October.

The female lays 3 or 4 white eggs.

19. LITHOFALCO. GMEL. }
 ÆSALON. MONTAGU. } MERLIN.

F. Cera lutea, corpore supra cinereo, subtus rufo maculis longitudinalibus fuscis, cauda cinerea, versus apicem nigricante, apice alba. Gmel.

The bill is blue; the cere and legs yellow; the irides are dark; the head is rust colour, streaked with black; plumage, above, ash colour, with ferruginous spots; beneath, yellowish white, with brown spots; the tail is long, and barred with brown and dusky.

The merlin is the least of our hawks, it differs from the rest of the falcons, in the peculiarity of the male and female being of the same size. It appears in October, about the period the hobby leaves us. It flies low, and with great swiftness. Food, small birds.

In the countries where it breeds, the female lays 5 or 6 plain chocolate coloured eggs.

20. CINERAREUS. MONT. }
 HYEMALIS. LATHAM. } WINTER-FALCON.

F. Fusco-ferrugineus, subtus albus fusco maculatus, cauda ferrugineo nigroque fasciata. Shaw.

The bill is black the base and cere greenish; the irides are bright yellow, as are the orbits. The crown of the head, cheeks, throat, back, and scapulars are cinereous brown; the under parts of the body, tail,

coverts, and thighs are white, with a broad streak of bright bay down the shaft of each feather; the under scapulars are barred with bay and white; the tail is cuneiform, the two middle feathers dusky brown, the rest dark ash colour; the legs are orange yellow, long and slender; the claws small and black. *Montagu in Lin. Trans. vol. 9. p. 188.*

Length 18 inches, breadth 3 feet 8½ inches.

The eggs are white.

GENUS II.

STRIX.

Bill hooked, without cere, head and eyes large, exterior toe moveable backwards, tongue bifid.

NOCTURNAL.

Birds of this genus possess the power of wholly closing the pupil of the eye, by which few or no rays of light are admitted.

(HORNED, OR HAVING AURICULAR FEATHERS.)

1. BUBO. EAGLE OWL, OR RUFOUS HORNED OWL.

S. Auriculata rufa; maculis punctisque nigris, fuscis cinereisque variato. Shaw.

The bill is strong, and much hooked; the irides are

bright yellow; the plumage is rusty brown, finely variegated with black and yellow lines and spots; it has two tufts on the head; the belly and tail are barred with brown; the legs are strong and downy, of a rust colour; the claws are dusky.

This species is rare in Britain, we sometimes, however, in mountainous situations, find its nest formed of sticks and fibrous roots. The female lays two eggs which are mottled.

Spallanzani found that the gastric juice of the owl and some hawks, is perfectly incapable of digesting vegetable substances, however triturated or masticated; but that the gastric fluid of the ring-tail eagle, digested bread when forced into the stomach, although the bird would not touch it voluntarily after four days fasting.

The gastric fluid will not act upon the enamel of the teeth, horn, or the cartilaginous portion of the gizzard of fowls.

2. OTUS. LONG EARED OWL.

S. Auriculata ferrugineo-flavescens, nigro-griseoque variata, pennis auricularibus nigro-fasciatis.
Shaw.

The bill is black; the irides orange yellow; the plumage is variegated with white, rusty, and brown; *auricular feathers six*, dark brown; the breast and neck are yellow, marked with dusky streaks; the belly and vent are cream colour.

Length 15 inches, weight 9 or 10oz.

It builds in hollow trees, or takes, like many other species, possession of a deserted nest.

The female lays 4 or 5 white eggs: the young are at first white.

Its prey is mice and small birds.

3. BRACHYOTOS. SHORT EARED OWL.

*S. Auriculata ferrugineo-flavescens, fusco varia, pen-
nis auricularibus angustis, cauda maculis subocel-
latis.* Shaw.

The bill is dusky; the irides bright yellow; a circle of black runs round the eye; the ears are of three feathers of a pale brown, or tawny colour; the breast and belly pale yellow marked with dark streaks; the legs and feet are covered with pale yellow feathers; the claws are black; *the tail feathers are ocellated.*

Length 14 inches, extent 3 feet, weight 11 oz.

Migratory, appearing in October, and departing in spring.

It is generally found amongst long grass, and has not been observed to perch on trees.

Feeds chiefly on field mice.

We have seen an owl similar to this, in Westmoreland, where it is called the fell-owl. In one which we shot on Stanemoor, in August, the ears were not discernable, probably it might be a young bird. *W.*

4. SCOPS. SCOPS, OR LITTLE HORNED OWL.

S. Auriculata griseo-fusca, subferrugineo nigroque varia, subtus cinerea nigro varia. Shaw.

The bill is black; the irides are yellow; the whole plumage is variegated with dusky, rufous, brown, and grey; on the upper parts the brown predominates; on the under parts the grey; the quills are transversely barred with rufous white; the legs are covered to the toes with rufous grey feathers, spotted with brown; the toes and claws are brown. Migrates.

The length is about $7\frac{1}{2}$ inches.

A specimen was shot by Mr. Fothergill, near Wetherby, in 1805. *Montagu.*

(WITHOUT HORNS.)

5. NYCTEA. SNOWY OWL.

S. Nivea nigro maculata, rostro nigro, iridibus flavis. Shaw.

The bill is black; the irides are yellow; the plumage varies from pure white, to that of being marked on the head with small brown spots, and with narrow lines of the same, transversely placed on the back, and under the wings, and on the sides; the quills are also spotted with brown, as well as the feathers of the tail; the legs and toes are covered with close white feathers; the claws are black, and very much hooked.

It often flies by day, and preys upon grouse and hares.

This species is found in the Orkney and Shetland isles, where its cry is said to be extremely distressing, resembling the lamentations of a man in deep distress.

In the xi. vol. of *Lin. Trans.* Mr. Bullock gives an account of his having shot one in July, 1812.

6. FLAMMEA. BARN OWL, HOWLET, OR SCREECH OWL.

S. Subfulva griseo-varia, scapis pennarum albo nigroque maculatis, subtus alba, oculis glaucis.
Shaw.

The bill is pale horn colour; the eyes are dark; the head, back, and wings of a pale chesnut, variegated with grey, brown, and white; the breast, belly, and thighs are white, in some specimens spotted with dark; the middle claw is serrated.

Length 13 or 14 inches.

Var. With a yellow breast.

It makes little nest, but deposits 3 or 4 white eggs in the hole of some old building, or decayed tree.

The male and female alternately sally out in quest of mice for their young.

Montagu mentions that this species snores and hisses, but does not hoot.

A curious anecdote is related of this owl, by a gentleman who resides in Yorkshire and who is well acquainted with Ornithology. Having observed the scales of fishes in the nest of a pair, which had built near a lake, upon his premises, he was induced one moonlight night to watch their motions ; when he was agreeably surprized to see one of them plunge into the water, and seize a perch, which it bore to its nest, whence the gentleman took it.

7. PASSERINA. LITTLE OWL.

S. Subolivaceo-fusca albido maculata, subtus albida fusco maculata, remigibus albo-fasciatis, iridibus flavis, Shaw.

The bill is dusky, at the tip yellow ; irides pale yellow, the upper parts olive brown ; the crown and wing coverts are spotted with white ; the breast and belly are white, spotted with brown ; the tail feathers are rust colour and brown, tipped with white ; the claws are brown.

Length 8 inches.

It flies partially by day, and often catches birds which it plucks (contrary to the practice of other owls) before it eats them.

The female lays 5 or 6 eggs, spotted with white and yellow.

8. STRIDULA. }
 ULULA. Syn. } MONTAGU. }
 SYLVATICA. SHAW. } TAWNEY,
 BROWN, OR
 WOOD OWL.

S. Capite lævi, corpore ferrugineo, remige tertio longiore. Lin.

S. Ferrugineo seu griseo-fusca nigro varia, tectricibus albo maculatis, oculis glaucis. Shaw.

The bill is light brown; irides dark, and very large; the head, neck, back, wing coverts, and scapulars are tawney brown, spotted with brown and black; on the wing coverts are three rows of large white spots; the breast and belly are yellow, streaked with brown; the toes are dusky.

Length 15 inches; weight 19oz.

It is the only British owl that hoots, when it inflates the throat to the size of a hen's egg.

The female lays 2 or 3 dull white eggs, without gloss.

Its food is leverets, moles, &c. which it skins before eating.

GENUS III.

LANIUS.

Bill hooked towards the end, with a notch in the upper mandible, the tongue jagged, the outer toe connected to the middle one as far as the first joint.

Birds of this genus differ in parental care from the rest of the order Accipitres. They do not drive the young from the nest as soon as they are capable in some measure of supporting themselves, but live in company with them until the next pairing season. They hunt in concert.

(MIGRATE)

1. EXCUBITOR. CINEREOUS, SHRIKE, OR
GREAT BUTCHER BIRD.

*L. Canus, subtus albus, alis cauda cuneata fasciaque
oculari nigris, rectricibus lateralibus albis.*
Shaw.

The bill and legs are black; the mouth bristly; irides dusky; the upper parts of the plumage are pale blue ash colour; the wings are black with a white bar; cheeks white, with a black stroke across; the under parts are white; the tail of twelve cuneiform feathers.

Weight 2oz. length 10 inches.

It preys chiefly on small birds, these it first strangles, and then fastens on some sharp thorn, in order conveniently to tear and devour.

It has the insidious art of imitating the notes of other birds, and thus alluring them to destruction.

The female lays 6 dull olive green eggs, spotted with black at the larger end.

2. COLLURIO. RED BACKED SHRIKE OR
FLUSHER.

L. Capite cano fascia oculari nigra, dorso tectricibusque ferrugineis, pectore subroseo, cauda nigra.
Shaw.

The bill and legs are black; irides hazel; the head and rump are grey; the back and wing coverts of a bright rusty end; the breast, belly, and sides pale rose colour; the throat is white; the cheeks white, with a black stroke; the tail black, edged with white.

This shrike visits us in the spring, and retires in autumn.

It is found about Titchfield, in Shropshire, and in the neighbouring counties.*

The female lays 5 or 6 bluish coloured eggs, with cinereous brown spots.

*See Mr. Martwick's paper on the migration of birds in 1st vol. *Lin. Trans.*

3. RUFICOLLIS. WOOD-CHAT.

*L. Albo nigroque varius, fronte fasciaque oculari
nigris, occipite colloque supra ferrugineis.*
Shaw.

The bill is horn colour, with white feathers at the base; a black line extends across the eye, and runs down the neck; the head and back of the neck, are light bay; the back is dusky; the scapulars white; the quill feathers are black, with a white spot towards the bottom; the breast and belly are yellowish white; the two middle tail feathers and legs are black.
Pennant.

ORDER II. PICÆ.

Bill compressed, convex.

Birds of this order are furnished with an intermediate stomach.

They eject indigestible substances more frequently than the Accipitres.

The genus corvus have little crops, but the secretion from the *Æsophagus* appears to act upon the food.

(OMNIVOROUS)

GENUS IV.

CORVUS.

Bill strong, conic, with reflected bristles at the base, tongue bifid.

1. CORAX. RAVEN, GREAT CORBIE CROW.

R. Bipedalis ater, supra cæruleo-nitens, cauda rotundata. Shaw.

The bill is strong, and thick, about $2\frac{1}{4}$ inches long; the irides are dusky; the plumage is glossy blue, black above, beneath dusky; the tail of twelve feathers.

They frequent the rocky coasts, and feed upon young chickens* and carrion.

They live in pairs, and the female lays bluish green eggs, spotted with brown and ash colour.

Weight 2lb. 7oz. female more.

Length 26 inches.

* Mr. Lambert in 3d vol. Trans. Lin. Society, mentions having seen the raven feeding its young out of the nests of a rookery.

2. CORONE. CARRION CROW.

C. Sesquipedalis ater cæruleo-nitens, cauda rotundata, rectricibus acutis. Shaw.

The whole plumage is bluish glossy black; irides dusky, the tail is rounded.

Weight 19oz. length 18 inches.

The female lays 4 or 5 greenish coloured eggs, spotted with dusky ash colour.

3. FRUGILEGUS. ROOK.

C. Sesquipedalis ater cæruleo nitens, rostro basi albicante-denudato, cauda subrotundata rectricibus rotundatis. Shaw.

The whole plumage is bluish black, like the carrion crow; the only mark of distinction is, in adult birds they are bare of feathers about the mouth, the young can only be distinguished by their note.

Var. pied and white.

Rooks have pouches under their tongue in which they carry food to their young.

They are gregarious, and build in great numbers upon the same tree.

The females lay 4 or 5 greenish white eggs blotched with dusky.

They feed principally upon insects; and are a great means of preventing the increase of that destructive

insect, the cockchafer, (*Scarabæus Melolontha* Lin.) the *larva*, of which, as well as the perfect insect, they devour in incredible numbers.

4. CORNIX. HOODED CROW.

C. Canus, capite jugulo alis caudaque nigris.
Shaw.

The bill is black; the irides dusky; the head, neck, wings, and tail are black; the back, and all the under parts are pale ash colour, the legs are black.

Weight 22oz. length 21 inches.

Migrates, visiting us in October, and retiring northward in April to breed.

The eggs are like those of the common crow.

This bird, my assistant observed in Orkney, to break shell-fish, by letting them fall upon the rocks from a great height.

The hooded crow is rarely seen in this part of the country, but is frequent on the shores of our tide rivers, during the winter. We have seen it in most parts of the Highlands, Scotland, in July and August.

A remarkable instance of a male of this species, pairing with the female carrion crow, (*corvus corone*) we witnessed at Aroquhar, on Lock Long, and this singular attachment, had subsisted three or four years, their nest was like that of carrion crow, in the fork of a tall pine, and the young brood had already flown, but we were unable to procure one of them, or to ascertain which of the parents they most resembled. *W.*

5. MONEDULA. JACK-DAW.

C. Niger, supra subcæruleo-nitens, occipite cano, iridibus albidis. Shaw.

The bill is black; the irides are white; the hinder part of the head and neck are hoary grey; the rest fine glossy black.

Weight 9oz. length 13 inches.

They are gregarious, and build in old towers.

The female lays 5 or 6 bluish eggs, spotted with black.

6. GLANDARIUS. JAY.

C. Gilvus, macula suboculari alis caudaque nigris, plaga alari alba, tectricibus cæruleo nigroque decussatis. Shaw.

The bill is black; irides whitish; forehead tufted white streaked with black, the feathers of which it can erect; the chin white; a black stroke runs from the corners of the bill; the head, neck, and back are light cinnamon colour; the breast lighter; the less wing coverts are bay; the belly and vent white; the greater wing coverts are barred with black, fine pale blue, and white alternately; the greater quills are black, with pale edges; the rump is white; the tail black; and legs dirty brown.

The jay builds in woods, and forms its nest of twigs and fibres.

The female lays 5 or 6 light brown eggs.

The young continue with their parents until the following spring.

Their food is fruit and grain ; in autumn acorns.

7. PICA. MAGPIE, OR PLANET.

C. Niger purpureo viridique nitens, scapularibus pectore abdomine remigibusque intus albis, cauda elongata cuneata. Shaw.

The bill is black ; irides dark ; the breast, upper part of the belly, and scapulars are white, the rest black ; the wings and tail are beautifully glossed with green, blue, and purple ; the tail is very long, wedge shaped ; the legs are black.

Var. white and cream colour.

Weight 8 or 9oz. length 18 inches.

The magpie forms an oval nest, with the entrance on one side.

The female lays 6 or 7 pale green eggs, spotted with brown.

8. GRACULUS. CORNISH CHOUGH, OR RED-LEG-
GED CROW.

C. Violaceo-niger, rostro curvato pedibusque rubris.

Shaw.

The bill is long, and curved, of a bright red colour; the irides are of two circles, red and light blue, (*Bewick*) irides hazel (*Montagu*;) the eye lids red; the whole plumage is of a violet purplish black; the legs are red; the claws much hooked, and black.

Weight 14oz. length 17 inches.

These birds chiefly build on cliffs by the sea side, and are found in Devonshire and Cornwall.

The female lays 4 or 5 cinereous white eggs, with dull yellow spots.

9. CARYOCATACTES. NUT-CRACKING CROW.

C. Fuscus albo punctatus, alis caudaque nigris, rectricibus apice albis. Shaw.

The bill is black; the irides are hazel; the head and neck are black; plumage brown, spotted with triangular white spots; the great wing coverts and tail are tipped with white; the rump white; the legs black.

Length 13 inches—rare.

GENUS V.

CORACIAS.

Bill cultrated and curved towards the apex; legs short; toes three before, one behind, divided to their origin.

1. GARRULA. ROLLER.

C. Thalassina, cauda subintegra, alis cæruleo thalassino nigroque variis, dorso testaceo, uropygio cæruleo.

Shaw.

The bill is black, with bristles at the base; the eyes are surrounded with a naked skin of a yellow colour; the head, neck, breast, and belly are pea green; the back and scapulars are reddish brown; the points of the wings and upper coverts are of a rich deep blue; the greater coverts are pale green; the rump is blue; the tail forked, green, blue and black; the legs are short and dull yellow.

Length 12½ inches.

Migrates—rare.

GENUS VI.

ORIOIUS.

Bill straight, sharp pointed; tongue bifid; toes three forward, one backward; the middle one joined near the base to the outmost.

1. GALBULA. GOLDEN ORIOLE.

O. Luteus, loris alis caudaque nigris, rectricibus apice flavis. Shaw.

The bill is brownish red; the irides red; plumage fine golden yellow; between the bill and eye is a streak of black; the wings are black, marked here and there with yellow, and a patch of the same in the middle of the wing; the two middle feathers of the tail are black, inclining to olive at the base; the tips are yellow; the base half of the others are black, the rest yellow; the legs are lead colour; claws black.

Length $9\frac{1}{4}$ inches.

The female is of a dull greenish brown, where the male is black. *Montagu.*

The nest is of the shape of a purse, and is fastened to the twigs of tall trees, it is composed of the fibres of hemp and straw, lined with moss.

The female lays 4 or 5 dirty white eggs, with small dark spots.

This bird rarely visits England, but it is common in France during the summer.

Its food is grapes, figs, and cherries.

GENUS VII.

CUCULUS.

Bill somewhat arched ; tongue short entire ; tail of ten feathers ; toes two backward, two forward.

CANORUS. CUCKOO.

C. Capite, gula, collo, jugulo cinereis ; pectore ventrique albidus fusco transversim striatis ; dorso, alisque nigricantibus ; rectricibus nigricantibus externe, intermediisque medio albido-maculatis.
Shaw.

The bill is black ; the mouth red ; irides yellow ; plumage above ash colour ; beneath waved with transverse black lines ; the tail is long rounded and spotted with white ; the legs are short and yellow ; the claws white.

The cuckoo appears early in spring, and is well known by its note.

They feed chiefly on insects, particularly the *larvæ* of the *Lepidopterous* ones, even the most hairy.

For a particular description and history of this bird, see *Phil. Trans.* 78 vol. *Mont. Orn. Dic.* and *White's Nat. Calendar.*

The eggs are white, sprinkled with ash colour. These it deposits, not in a nest of its own construction, but in that

of the hedge sparrow, or other small bird, the foster-parent rears the young of the intruder to the destruction of its own offspring, for the eggs are thrown out of the nest, by the young cuckoo.

It is curious also, that when two cuckoo-eggs, are deposited and hatched, the stronger bird ejects the weaker, and remains sole possessor of the nest.

“A young cuckoo was hatched in the nest of a water-wag-tail; after it had quitted the nest, we observed the singular manner, in which it was fed by its foster-parent; the young bird remained squatted on the ground, and in that position, with its head thrown backwards, and gaping with its mouth, received the wag-tail on its back, who liberally supplied it with worms and insects.” *W.*

GENUS VIII.

YUNX.

Bill short, roundish, pointed; nostrils concave, naked; tongue three times the length of the bill, slender, and armed on the point, with a horny substance; tail of ten flexible feathers; toes two backwards, two forwards.

1. TORQUILLA. WRYNECK.

Y. Grisea fusco nigricanteque varia; abdomine rufescente-albo maculis nigricantibus; rectricibus maculis striis fasciisque nigris undulatis.

Shaw.

Bill three quarters of an inch long; irides yellowish;

above ash colour, most beautifully variegated with dark brown and black lines, beneath light brown spotted with black; tail ash colour, with four black bars.

Weight $1\frac{1}{2}$ oz. length 7 inches.

It arrives about the middle of April, and departs in September.

It makes little nest, but deposits 9 or 10 white eggs in the hole of a decayed tree. It is said to hiss when surprized.

GENUS IX.

PICUS.

Bill many sided, straight, wedge shaped, at the tip, nostrils covered with bristles, tongue long,* slender, and barbed at the point; toes two before, two behind; tail of ten stiff sharp pointed feathers.

* As birds do not possess the sense of taste, the fluid usually secreted by the parotid gland is not saliva, but a mucus fluid, and its use is to lubricate the throat, and defend it from the many hard substances constantly swallowed. In the woodpecker this gland is unusually large, and the fluid most viscid, which enables it to attach insects, &c. the better to its curiously formed tongue. This organ in most birds has the os hyoides, which runs in the centre cartilaginous, but in the wood-pecker it is completely ossified, runs longitudinally through the tongue, and projects at

its tip, a barbed point, the use of this structure is of course to transfix insects. But in order to allow a sufficient protrusion and retraction, the cornua of the os hyoides are elongated backwards and upwards, and slide in a groove of the Cranium. Thus by the surprizing latitude of motion, which this conformation allows, conjoined also with the elasticity of the root of the tongue, and the peculiar muscles which produce its motions, the bird has the power of darting out for several inches its singular weapon.

1. MARTIUS. GREAT BLACK WOOD-PECKER.

P. Niger pileo coccineo. Shaw.

Bill $2\frac{1}{2}$ inches long, of a dark ash colour, and whitish at the sides; the irides are pale yellow; plumage black, except the crown of the head which is vermilion; the two middle tail feathers longer than the rest; the legs are lead coloured, feathered on the fore part half their length. *Latham.*

Var. in some the red crown is wanting.

The female has only the hind part of the head red.

She lays 2 or 3 white eggs in the hole of a tree.

The size of a jack-daw, length $17\frac{1}{2}$ inches.

This bird has a loud note.

It feeds upon caterpillars.

2. MAJOR. } GREATER SPOTTED WOOD-PECKER,
 MEDIUS. Syn. } OR WITWALL.

P. Albo nigroque varius, crisso occipite rubris.
 Shaw.

The bill is horn colour; the irides red; the crown of the head black, hind part crimson; the cheeks are white; a black collar round the neck; the back and rump black; the scapulars white; the breast yellowish white; the vent crimson; the legs are lead colour.

In the female the head is wholly black.

The female lays 5 white glossy eggs.

3. MINOR. LESSER SPOTTED WOOD-PECKER,
 OR HICKWALL.

P. Albo nigroque varius, vertice rubro, crisso testaceo.
 Shaw.

The crown is crimson; irides red brown, above black, barred with white; beneath dirty white; the legs are lead colour.

Weight 5 drams, length $5\frac{1}{2}$ inches.

Female white on the crown.

She lays 5 white eggs.

4. VILLOSUS. HAIRY WOOD-PECKER.

P. albo nigroque varius, subtus albus, dorso longitudinaliter sub-villoso, rectricibus extimis toto albis.
Shaw.

The bill is horn colour; the head black; on each side are two white streaks, one over the eye, the other along the jaw, both arising from the base of the bill; across the hind part of the head is a red band; the upper parts of the body are black; divided down the middle of the back with a list of white hair-like feathers; the wings are spotted with white; the under parts of the body are wholly white; the tail feathers black and white; the legs and claws greenish brown.

The female wants the red head.

5. VIRIDIS. GREEN WOOD-PECKER, PICK-A-TREE, OR POPPIN-JAY.

P. viridis, vertice coccineo. Shaw.

The bill is dark horn colour; the irides of two circles, the outer one white, the inner one red; the back is green; the rump pale yellow; beneath pale green; the quill feathers and tail are barred with black; the legs are greenish.

The female has no red streak from the corners of the mouth.

She lays 5 or 6 greenish eggs, marked with small black spots.

Its food is the *larvæ* of insects.

“*Montagu* observes, that it often smells of the *larvæ* of *Phalena Cossus*; and that they never climb down a tree, but always up.”

GENUS X.

ALCEDO.

Bill long triangular, tongue short, sharp pointed; legs short, feet, in most species gressorial.

1. ISPIDA. KING-FISHER.

A. atro-viridis, subtus fulva, dorso cæruleo nitidissimo, vertice maculis transversis cæruleis. Shaw.

The bill is two inches long, and blackish; base of the lower mandible orange; irides light hazel; crown and coverts of the tail bright azure; under parts dull orange; legs red orange.

The king-fisher generally deposits her eggs in an ascending rats-hole.

The nest is composed of the bones of fishes, the castings of the parent birds.

The eggs are 7, white and transparent.

It is supposed that the young are fed by the parents ejecting food from their stomachs.

See an interesting account in Mont. Orn. Dic.

GENUS XI.

SITTA.

Bill subulate, straight, sharp pointed; nostrils covered with reflected bristles; feet three toes forwards, one backward.

1. EUROPEA. NUT-HATCH, WOOD-CRACKER, NUT-JOBBER.

S. plumbea, subtus sub-ferruginea fascia transoculari nigra, reatricibus lateralibus nigris prope apicem albidis. Shaw.

The bill is strong, black above, beneath white; irides hazel; the crown and upper parts are of a fine bluish grey; the cheeks and chin are white; breast and belly are of a dull orange; quills dusky; the legs are pale yellow.

The female lays 6 or 7 white eggs, spotted with rust colour.

She forms her nest in the hole of a tree, the en-

trance to which is contracted, by a plaster of clay, so as barely to allow a passage.

When disturbed she hisses like a snake.

The nut-hatch feeds upon beetles and nuts, the latter after securing in a chink, it cracks by a stroke of its bill.

GENUS XII.

MEROPS.

Bill quadrangular, a little incurvated, sharp pointed; tongue slender, in some species fringed at the end; toes three forward, one backward, the outer toe somewhat connected with the middle one.

1. APIASTER. BEE-EATER.

M. thalassina, gula flava, dorso ferrugineo-flavescente, fascia oculari nigra, rectricibus mediis elongato-acuminatis. Shaw.

The bill is black; the base of the upper mandible covered with dirty white feathers; irides vivid red; the forehead is of a blue-green colour; the hind parts of the head and neck are chesnut; the back and scapulars are fulvous; the throat yellow; under parts, as are also the tail coverts, and rump blue-

green; tail wedge shaped of twelve feathers; legs reddish brown.

Shot near Mattishall, in Norfolk, June 1794.
Lin. Trans. vol. 3. p. 333.

The bee-eater is subject to much variety in colour.

GENUS XIII.

UPUPA.

Bill long; sub-compressed, slender and bent; tongue short, sagittated; head crested; feet formed for walking.

1. EPOPS. HOOPOE.

A. ferruginea, alis albo nigroque fasciatis, cauda nigra fascia lunata alba, crista albo nigroque terminata. Shaw.

The bill is two inches long, black, slender, and curved; irides are hazel; the crest is pale orange, tipped with black; the neck is reddish brown; the breast and belly white; the back, scapulars, and wings are crossed with broad bands of black and white; the lesser wing coverts are light brown; the rump white; the tail feathers are ten, black, with a white crescent at the roots; the legs are black.

Weight 3oz. length about 12 inches.

The female lays 4 bluish white eggs, marked with pale brown spots, in a nest composed of bents.

It is said to be dirty in its habits, preferring dung and putrid carcases for its abode.

GENUS XIV.

CERTHIA.

Bill slender bowed, sharp pointed; feet formed for walking; tail of twelve feathers.

1. FAMILIARIS. CREEPER.

C. castanea nigro albidoque varia, subtus alba, cauda subfulva rectricibus acuminatis. Shaw.

The bill is brownish; irides hazel; above brown, streaked with black; the quills are tipped with white; beneath is silvery white; the tail of twelve long feathers, forked at the end; legs short and brown; claws hooked.

Weight 5 drams, length about 6 inches.

The female builds early in the spring, in the hole of a tree.

She lays from 5 to 7 ash coloured spotted eggs.

ORDER III. PASSERES.

Bill conic, pointed, nostrils broad, oval, naked.

The stomach is furnished with a gizzard.

The food is previous to digestion macerated in the crop. This receptacle which most birds possess for the purpose of retaining and moistening the food, is situated just above the forked bone* of the breast, and is a dilatation of the *Æsophagus*.

It secretes a liquor which softens the food, and in some species acts upon the aliment, partially digesting it before its passage to the stomach.

GENUS XV.

STURNUS.

Bill straight, subulate, and somewhat angular; feet simple, three toes before and one behind.

1. VULGARIS. STARE OR STARLING.

S. rostro flavescente, corpore æneo-nigro nitente, punctis albis. Shaw.

The bill is yellow, with a prominent margin round the nostrils; the irides are brown; the head, neck,

* This bone is peculiar to birds.

and upper parts black, glossed with purple and green; the feathers on the neck are long and pointed; the whole plumage except the throat is marked with yellow spots; the tail has twelve feathers; the legs and feet brown.

These birds vary much according to age; the young so little resemble the parent bird as to have been described by *Montagu* as the *turdus solitarius*, or solitary thrush.

The female lays 4 or 5 light blue eggs, in a nest composed of dry grass, &c.

GENUS XVI.

TURDUS.

Bill nearly straight, upper mandible notched, and bent at the apex; mouth furnished with a few slender hairs at the corners.

1. VISCIVORUS. MISSEL THRUSH, OR STORM COCK.

T. supra, griseo-fuscus, subtus albo-flavicans maculis nigricantibus varius, rectricibus tribus extimis albo terminatis. Shaw.

The bill is dusky; the irides are hazel; plumage light brown above; beneath yellowish white, with dark spots; the quills are brown, cinereous on the

outer webs; the tail of twelve feathers; exteriors tipped with white; the legs are yellowish brown.

Weight 5oz. length 11 inches.

The female lays 4 or 5 flesh coloured eggs, spotted with blood red spots, in a nest composed of lichen and coarse grass, and lined with wool.

It is our largest singing bird.

Mr. White of Selborne observed that in severe snowy weather, the thrush genus, searched out and eat the pungent root of the cuckoo-pint. (*Arum maculatum*.)

2. MUSICUS. THROSTLE, MAVIS, OR THRUSH.

T. supra griseo-fuscus, subtus albo rufescens maculis nigricantibus varius, remigibus basi interiore ferrugineis. Shaw.

The bill is dusky; the irides are hazel; the head and upper parts are yellowish brown; the throat, neck, and sides are yellowish; the breast and belly are white, spotted with black; inner coverts of the wings dark orange; the legs and mouth are yellow.

Length 9 inches,

The female lays 4 or 5 blue eggs, spotted with black, in a nest, the outside of which is formed of green moss and dried grass, and plastered within with a mixture of rotten wood and cow dung, or clay.

3. ILIACUS. RED-WING, OR WIND-THRUSH.

*T. griseo-fuscus, subtus albidus maculis fuscis, alis
subtus ferrugineis, superciliis, albicantibus.*
Shaw.

The bill is dusky, yellowish at the base of the upper mandible; the irides are dusky; above it is brown grey; a white streak over each eye; beneath it is spotted with brown; the edge of the wing tinged with red; the belly is white; the legs are pale brown. Migratory.

Var. cream coloured brown, bill and legs almost white. *Montagu.*

In the northern countries where they breed, the female lays 6 greenish eggs, spotted with black.

"Both this species and the field-fare, visit us in October, but retire much later than has been remarked by any Ornithologist. We have frequently observed large flocks of both species, as late as the beginning of June." *W.*

4. PILARIS. FIELD-FARE.

T. fusco-rufescens, subtus nigricante varius, rectricibus nigris, extime margine interiore apice albicantibus, capite uropygioque cano. Shaw.

The bill is yellow; irides dark brown; the head and rump are ash colour; the back deep brown;

the tail and legs are black brown; the breast and throat are yellowish, spotted with black.

The field-fare arrives in October, and departs together with the red-wing, generally about March.

Weight 14oz. length 10 inches.

5. MERULA. BLACK-BIRD, OR AMSEL.

T. ater rostro palpebris pedibusque fulvis. Shaw.

The bill, edges of the eye-lids, and inside of the mouth are of a beautiful yellow; the irides are dark; the plumage in the adult male fine glossy black; the legs dirty yellow.

The female and young birds are brown, or rust colour.

She lays 5 light blue eggs, spotted with ferruginous brown.

The nest is formed of green moss, and fibrous roots, the inside plastered with earth and lined with grass.

6. TORQUATUS. RING-OUZEL, OR MICHAEL-MAS BLACK-BIRD.

T. nigricans, torque albo, rostro flavescente. Shaw.

The bill is dusky; the irides are hazel; the plumage black brown; the edges of the feathers

of a light brown colour; a white crescent on the breast.

They migrate partially.

Weight 4oz. length about 11 inches.

The nest and eggs much like the black-bird.

7. ROSEUS. ROSE-OUZEL.

T. subincarnatus, capite alis caudaque nigris, occipite cristato. Shaw.

The bill is of a flesh colour, black at the base; irides pale; a long pendent crest; the head, neck, wings, and tail are black, glossed with blue, purple, and green; the back, rump, breast, belly, and lesser wing coverts are a pale rose colour, with black spots; the legs are dirty orange.

Length 8 inches.

The females are paler.

This bird is very rare in England, specimens have been shot several years about Ormskirk in Lancashire; and a pair at Irvine, Scotland.

GENUS XVII.

CINCLUS.

Beak downy, rounded at the base, slender, straight towards the tip, rather compressed and bent down; the margins slightly toothed; nostrils naked; tail short; feet simple, with three toes before and one behind. *Shaw.*

1. EUROPÆUS. *Shaw.*
 STURNUS CINCLUS. *Lin.* } WATER-OUZEL.

C. fusco-nigricans, genis gutture collo inferiore et pectore niveis, ventre supremo fusco rufescente, imo rectricibusque nigricantibus. Shaw.

The bill is black; the irides hazel; the eye-lids white; the head and neck are deep brown; the neck and breast are white; the belly red brown; the tail black; the legs are bluish before, behind black.

Weight 2½oz. length 7 inches.

The female lays 5 or 6 semi-transparent white eggs, in a nest formed of moss and water plants and lined with oak leaves.

It possesses the power of walking in quest of its food, on the pebbly bottom of rivulets, with the same ease as on dry land.

GENUS XVIII.

GLAREOLA.

Beak straight at the base, strong, compressed, and incurved at the tip; nostrils linear, and placed obliquely; gape very wide; feet with four toes connected together by a membrane at the base; tail forked, consisting of twelve feathers.

1. AUSTRIACA
HIRUNDO PRATINCOLA. Lin. } AUSTRIAN
PRATINCOLE.

G. griseo-fusca subtus rufo-alba, linea gulari incurvata nigra, rectricibus quatuor exterioribus basalibus. Shaw.

The bill is black, short, convex, or arched; the upper mandible pointed, slightly hooked, and longest; under mandible at the base and corners of the mouth coral red; irides are light brown; plumage above brown, the crown of the head and neck are tinged with rufous; the throat is yellowish buff; from the lower part of the eye originates a black line, which passes round below the throat, and encircles that part; the lower part of the neck, and upper part of the breast are buff; the sides of the rump and tail coverts white; the wings long; the legs are long purplish brown, bare above the knees.

A bird of this species was shot near Liverpool, May 18th, 1804. Also in the isle of Unst, by Mr. Bullock, see Lin. Trans. vol. xi.

GENUS XIX.

AMPELIS.

Bill straight, convex, upper mandible curved and notched; tongue cartilaginous and bifid; nostrils oval covered with small feathers.

1. GARRULUS. Lin. }
BOMBYCILLA BOHEMICA. Shaw } WAXEN,
CHATTERER

G. occipile cristato, remigibus, secundariis apice membranaceo colorato. Shaw.

The bill is black; the irides purplish; the feathers on the head are long forming a crest; the head, and all the upper parts of the body are reddish ash colour; the throat black; the breast and belly inclining to purple; the vent and tail coverts white; the tail feathers are black, tipped with pale yellow; the quills are black, the third and fourth tipped on the outer edge with white, the five following straw colour, in some bright yellow; the secondaries are tipped with white, each being pointed with a flat horny substance of a bright vermilion colour.

GENUS XX.

LOXIA.

Bill short and thick; nostrils small and round; tongue truncated; toes three before, one behind.

1. CURVIROSTRA. Lin.

CRUCIROSTRA.	} CROSS-BILL, OR SHELL-
VULGARIS Shaw.	

C. corpore versicolore, remigibus rectricibusque fuscis, oris exterioribus viridi olivaceis, cauda furcata. Shaw.

The bill is brown and strong, both mandibles* crossing at the points, hooked; irides hazel; the upper parts are reddish orange; the under paler, the vent nearly white; the wings short, brown; the legs black.

The female is dull olive green where the male is red.

They vary much in plumage with the seasons.

The female is said to build early in the year, and to place her nest under the bare branches of the pine

* Two bones which are not in quadrupeds, exist in the jaws of birds. The first is interposed between the articulations of the lower jaw and the os temporis with both of which it produces a joint; the other is joined to the first, and their use appears to be to give some degree of motion to the upper mandible.

tree, fixing it with the resinous matter which issues from that tree, and besmearing it on the outside with the same substance, so that the snow or rain cannot penetrate it.

It migrates, and is only an occasional visitant in the fir woods of Scotland.

2. COCCOTHRAUSTES. GROSBEAK, OR HAW-FINCH.

L. cinereo-castanea, linea alarum alba, remigibus mediis apice rhombeis, rectricibus latere baseos nigris. Shaw.

The bill is horn colour, very thick; the irides are grey; the crown and cheeks are bay; the chin and round the nostrils black; the back part of the neck is greyish; the wings varied with grey and brown, black and white; the tail is black, the outer feathers tipped with white; the breast and belly are pale rust colour; the legs are pale brown.

Vary much in plumage.

Migrate visiting us in small flocks in autumn, and departing about April.

In the northern countries where they breed, the female makes her nest in trees, of grass and liverwort; and lays eggs of a bluish green colour, spotted with brown.

3. ENUCLEATOR. PINE GROSBEAK, OR GREAT-
EST BULLFINCH.

*L. sordide roseo fusco griseoque varia, linea alarum
duplici alba, rectricibus totis nigricantibus.*
Shaw.

The bill is thick point hooked; irides hazel; the head, neck, breast, and rump crimson; the back and lesser wing coverts are black, edged with reddish; two white bars on the wings; the quills black, edged with pale; the secondaries edged with white; the belly and vent straw colour; the tail slightly forked; the legs brown.

The female is brown, tinged with green.

Inhabits the pine forrests of Scotland.

The female builds her nest in trees, and lays 4 white eggs, which are hatched in June.

4. PYRRHULA. BULLFINCH, ALP, OR NOPE.

*L. cinerea, capite nigro, tectricibus caudæ remigium-
que posticarum albis.* Shaw.

The bill is dusky; the irides black; the crown is black; the upper part of the head and neck are cinereous grey; the cheeks, breast, and belly red; the vent and rump white; the tail black; the legs dark brown.

The female is dirty brown, with a black crown.

The female lays 5 or 6 dull bluish-white eggs, in a nest formed of moss.

5. CHLORIS. GREEN-FINCH, OR GREEN-LINNET.

L. flavicante-virens, remigibus primoribus antice luteis, rectricibus lateralibus quatuor basi luteis.
Shaw.

The bill is thick whitish; irides dark hazel; plumage yellow green, the top of the head, neck, back, and lesser coverts olive-green; the greater coverts and outer edges of the wing quills ash colour: the vent and tail coverts the same, dashed with yellow; the rump yellow.

The female lays 5 or 6 pale green eggs, spotted with reddish brown.

The nest is formed of dry grass, and lined with hair, wool, &c.

 GENUS XXI.

EMBERIZA.

Bill conic angular on each side; a hard knob within the upper mandible.

1. NIVALIS. SNOW-BUNTING, OR SNOW-FLAKE.

E. remigibus albis, primoribus extrorsum nigris, rectricibus nigris, lateralibus tribus albis, Shaw.

The bill and irides are black; the head, neck,

wing coverts, and under parts are snow white ; the back, prime quill feathers, middle tail feathers and legs are black.

In summer the head, neck, and under parts of the body are marked with transverse waved lines of rust colour.

Plumage varies much according to the degree of cold ; they arrive in large flocks in the North of Scotland, in autumn.

It is remarked they do not perch, but run along the ground.

The female breeds in Greenland, and deposits 5 reddish-white eggs, spotted with brown ; in a nest formed of grass ; and lined with the down of the arctic fox.

2. GLACIALIS. TAWNY-BUNTING.

E. nigra, pennis flavo-fusco marginatis, gula uropygioque flavescentibus, subtus alba flavo obscura maculata. Shaw.

The bill is short, yellow, at the point black ; the crown tawny ; the forehead chesnut ; the hind-neck, and cheeks are the same, but paler ; the throat, sides of the neck, and round the eyes are dirty white ; the back and scapulars are black, edged with reddish brown ; the quill feathers are dusky, edged with white ; the secondaries white on the outer edge, the greater coverts are tipped with white ; the upper tail

coverts are yellow; the tail is a little forked, the two outermost feathers are white, three are black, tipped with white; the rest are wholly black; the legs are short and black. *Bewick.*

Vary much in plumage.

3. MONTANA. MOUNTAIN-BUNTING.

E. cinerea, subtus flavescente-undulata, capite castaneo fronte saturatiore, gula alba, rectricibus tribus extimis albis. Shaw.

The bill is strong and yellow, tip black; the forehead is dark chesnut, lighter on the hind part of the head and cheeks; the hind part of the neck and back are ash coloured; the latter more spotted with black; the throat is white; the breast and belly waved with flame colour; at the setting on of the wing grey, the first feathers are blackish brown, the rest white, the point of each dashed with brown; the three outer tail feathers are white, the rest dark brown; the feet are black; the hind claw long.

4. CITRINELLA. YELLOW-HAMMER, OR YELLOW-YOWLEY.

E. rectricibus nigricantibus, extimis duabus latere interiore macula alba acuta. Shaw.

The bill is dusky; the irides hazel; the crown,

chin, throat, and belly are yellow; the neck and back are greenish olive; the breast is reddish; the rump brown red; the tail a little forked, and edged with greenish yellow, the two outer feathers are marked with white on the exterior webs; the legs are brown yellow.

The nest is formed of straw and dried grass, and lined with fine grass and long hair.

The female lays from 3 to 5 whitish, or purplish-blue eggs.

5. CIRLUS. CIRL-BUNTING.

E. supra varia, subtus lutea, pectore maculato, superciliis luteis, rectricibus duabus extimis macula alba cuneata. Shaw.

Montagu first discovered this species near Kingsbridge, in the winter of 1800, amongst flocks of yellow buntings. See the *Orn. Dic. and Lin. Trans.* vol. 7. p. 276.

It is thus described: the bill is bluish lead colour above, paler beneath; the irides are hazel; the crown of the head, nape of the neck, and upper part of the breast are of a fine olive green; the first streaked with dusky; from the upper mandible, through the eye is a dusky stroke, above and beneath the eye is a bright yellow one; the throat is black, slightly tipped with brown, running into a bar under the yel-

low on the cheek; beneath this is a gorget of a beautiful bright yellow; the back and scapulars are of a fine chesnut brown, the former marked with dusky streaks; the margin of the feathers with olive; rump is olive brown; the upper tail coverts inclining to chesnut; the smaller wing coverts are olive green; the greater coverts are dusky, their outer webs chesnut brown; the greater quills are dusky, edged with green on their exterior webs; the smaller quills chesnut, dusky down their middle; across the breast is a band of chesnut, mixed with yellow; the belly and under tail coverts are yellow; the latter dusky on their shafts, the sides more inclining to brown; the under wing coverts are bright yellow; the two middle feathers of the tail are chesnut brown, the rest black, except the two exterior on each side, which have an oblique bar of white from the tip half way, and the outermost feather is white throughout the whole of the exterior web; the legs are brown; the claws dusky.

Weight 7 drams, length $6\frac{1}{2}$ inches.

The female is darker; she forms her nest of dry stalks, roots, and a little moss, lined with long hair and fibrous roots.

6. SCHÆNICLUS. REED-SPARROW, OR BUNTING.

E. capite nigro, corpore griseo nigroque, rectricibus extimis macula alba cuneiformi. Shaw.

The bill is dusky; the irides are hazel; the head, throat, neck, and breast are black; the upper parts and wings are reddish brown, with a streak of black down the middle of each feather; the under parts of the body are white, with brownish streaks on the sides; the rump and upper tail coverts are bluish ash colour, mixed with brown; the two middle tail feathers are black, with pale brown edges, the rest are wholly black, except the two outer ones, which are almost white; the ends are tipped with brown, having the base black; the legs and feet are dusky brown.

The nest is formed of grass, moss, and fibres, and is lined with fine grass.

The female lays 4 or 5 dirty bluish-white or purplish brown eggs, with many spots and veins.

7. MILIARIA. THE BUNTING, OR BUNTING-LARK.

E. grisea, subtus nigro-maculata, orbitis rufis.
Shaw.

The bill is brown; the irides hazel; plumage olive

brown, with black spots, beneath yellow white; the quills are dusky, with yellowish edges; the upper coverts are tipped with white; the legs are pale brown.

Length $7\frac{1}{2}$ inches.

The nest is formed of dry grass and straw, and a few long hairs.

The female lays 5 or 6 dirty white eggs, spotted with reddish brown and ash colour.

GENUS XXII.

FRINGILLA.

Bill conic, straight and sharp; tongue truncated; toes three forward, one backward.

1. DOMESTICA. COMMON SPARROW.

F. remigibus rectricibusque fuscis, corpore griseo nigroque; fascia alarum alba solitaria. Shaw.

The bill, round the eye, the under side of the neck and quills are black; the irides dark hazel; the back, scapulars, and wing-coverts are of a reddish brown, mixed with black; the under parts pale ash colour; the legs are pale brown.

The female is more dull, wanting the black patch, on the throat.

Sparrows build early in the spring, under the eaves of houses, and in holes in the walls; the nest is formed of hay, and lined with feathers. The female lays 5 or 6 reddish white eggs, lightly speckled with brown.

The ignorant, ever ready to judge from superficial observation, have condemned the sparrow, because it feeds on the produce of the farmer, as a most noxious bird, fit only to be extirpated. It is to be recollected, however, that insects form no inconsiderable part of the food of birds. Mr. Bradley in his treatise on husbandry and gardening, has proved by actual observation, that a pair of sparrows during the time they had young, carried to the nest 40 caterpillars in one hour; and supposing them employed with equal diligence for 12 hours a day, they will in one week consume the astonishing number of 3,360 caterpillars.

Thus an all wise Providence checks the inordinate increase of insects; which, however useful in themselves, would if left unmolested, propagate with such rapidity as to consume the vegetable productions of the earth, and leave it a desert waste.

2. MONTANA. MOUNTAIN, OR TREE SPARROW.

F. remigibus rectricibusque fuscis, corpore griseo nigroque, alarum fascia alba gemina. Shaw.

The bill is black; irides hazel; the crown of the head, and hinder part of the neck, are of a chesnut colour; the sides of the head are white; the throat

is black ; behind each eye there is a black spot ; the upper parts of the body are of a rusty brown, spotted with black ; the breast and under parts are dirty white ; the quills are black, with reddish edges ; as are also the great coverts ; the lesser are bay edged with black, and crossed with white bars ; the tail is of a reddish brown, and even at the end ; the legs are pale yellow.

The female wants the black marks on the throat and ears.

It builds on trees. The female lays 5 pale brown eggs, which are spotted.

This bird is not uncommon in Yorkshire, although scarce in some parts of the kingdom.

3. CŒLEBS. CHAFFINCH, SHILFA, OR SCOBby.

F. remigibus utrinque albis, tribus primis immaculatis, rectricibus duabus oblique albis. Shaw.

The bill, crown, back and sides of the neck are bluish ; the cheeks, under side of the neck and breast are dull pink ; the back is chesnut ; the rump greenish ; three white lines cross the wings ; the belly is reddish white ; the legs are dusky.

The female is of a dull green above, and wants the red.

The nest is formed of moss and lichen, interwoven with wool, and lined with feathers, and hair.

The female lays 4 or 5 dirty white eggs, tinged and marked with purple.

Mr. White, in his history of Selborne, observes, that great flocks sometimes appear in that neighbourhood, about Christmas, and that they are almost all hens. In Sweden the hens migrate, leaving the males.

4. MONTIFRINGILLA. MOUNTAIN BRAM- BLING, OR KATE.

F. nigra pennis rufo marginatis, subtus uropygioque alba, jugulo pectoreque rufescentibus, rectricibus lateralibus nigricantibus, extus albo marginatis.

The bill is yellow ; the irides are dusky ; the back and crown are black, edged with brown ; the chin, throat, breast, and less wing coverts are orange ; the inner coverts are yellow ; the quills are edged with yellow ; the belly and rump are white ; the tail a little forked and black, except the exterior feathers, which are white on the outer web ; the legs are greyish brown.

The female is less bright.

It is said to build in fir-trees, forming its nest of moss, and lining it with wool, hair, and feathers.

The female lays 4 or 5 white eggs, spotted with yellow.

“ The mountain finch is pretty common in Yorkshire, in winter, having frequently shot it from amongst flocks of

chaffinches, and other small birds during hard weather ; it varies greatly in its plumage." *W.*

5. CARDUELIS. GOLDFINCH, OR GOLDSPINK.

F. remigibus antrorsum luteis, extima immaculata rectricibus duabus extimis medio reliquisque apice albis. Shaw.

The bill is white, black at the tip ; irides dusky ; the forehead and chin are scarlet ; the top of the head is black ; the cheeks are white ; the breast is pale brown ; the belly white ; the wings are barred with golden yellow ; the tail is black, with a white spot on each feather ; the legs are flesh colour.

The goldfinch assembles in winter, in large flocks, and frequent those places where thistles grow, to feed upon the seed.

The nest is formed of moss, dried grass and roots, lined with wool, hair and thistle down.

The female lays 5 whitish eggs, marked with purple spots.

6. SPINUS. SISKIN, OR ABERDAVINE.

F. remigibus medio luteis, primis quatuor immaculatis, rectricibus basi flavis apice nigris. Shaw.

The bill is white, tipped with black ; the irides are dusky ; the top of the head is black ; the belly white ;

the rest of the body greenish yellow ; the tail is forked ; the two middle feathers black ; the rest are yellow, with black tips.

Length $4\frac{1}{2}$ inches.

The siskin visits us in large flocks at uncertain times in winter.

The female is said to lay dull white eggs.

7. CANNABINA. } GREATER RED POLE, RED LIN-
LINOTA. Syn. } NET, OR GREY LINNET.

F. fusco-castanea, subtus albo-rufescens, fascia alarum longitudinali alba, macula verticis pectoreque rubris. Shaw.

The bill is bluish ; the irides are hazel ; the head is light brown ; the forehead rosy-red ; the back, scapulars, and wing coverts are rufous-brown ; the breast is red ; the belly light brown ; the vent white ; the tail is forked ; the feathers are black, margined with white ; the legs are brown.

The red marks on the breast and crown often disappear entirely ; when this bird has been described as a different species, namely, the grey linnet, we are aware that many yet consider them as distinct, and have mentioned the colour of the eggs as a sure criterion ; from constant observation, however, we cannot without further proof change our opinion.

The female wants the red on the head.

The nest is composed of moss and bents interwoven with wool, and lined with wool and hair.

The female lays eggs of a pale green-colour, spotted with rusty.

8. LINARIA. LESSER RED POLE.

F. fusco griseoque varia, subtus albo rufescens, fascia alarum duplici albida, vertice pectoreque rubris
Shaw.

The bill is pale brown; irides hazel; the forehead and breast are rosy-red; the back is dusky edged with pale brown; two white bars cross the wings; the belly and thighs are dull white; the tail is dusky edged with dirty white, and forked; the legs are dusky.

The female wants the red on the forehead and breast; the former of which is sometimes yellowish.

The nest is formed of dried grass and wool, and lined with hair and feathers.

The female lays 4 white eggs, marked with reddish spots.

In winter they migrate in great flocks to the southern counties, where they are observed to feed upon the seed of the alder. They hang when feeding, like the titmouse, with their back downward.

9. MONTIUM. MOUNTAIN LINNET, OR TWITE.

F. supra varia, subtus rufescens, abdomine albido, superciliis fasciisque alarum rufescentibus, vertice uropygioque rubris. Shaw.

The bill is yellowish, the tip brown; the irides are hazel; the top of the head and rump are red; the upper parts are dusky black, edged with rufous; beneath is rufous-white, with blackish spots on the throat; the belly is white.

The female wants the red rump.

Var. with head light rufous.

The nest is formed of moss and roots of plants, mixed with heath.

The eggs are bluish-white, spotted with purplish.

GENUS XXIII.

MUSCICAPA.

Beak slightly triangular; the upper mandible notched; the base armed with bristles; nostrils rounded.

1. ATRICAPILLA. PIED FLY CATCHER, OR COLDFINCH.

M. nigra, subtus frontisque macula alarumque albis, rectricibus lateralibus extus albis. Shaw.

The bill is black; the irides hazel; the forehead

is white ; the top of the head, the back, and tail are black ; the rump is dashed with ash colour, ; the wing coverts are dusky, the greater coverts are tipped with white ; the exterior sides of the secondary quills are white, as are also the outer feathers of the tail ; all the under parts are white ; the legs are black.

The female has a longer tail, and is brown, where the male is black ; the white spot on the forehead is also wanting.

This bird is very rare ; we have observed it about Kirkstall Abbey, Yorkshire.

2. GRISOLA. SPOTTED FLY CATCHER, OR BEAM-BIRD.

M. subfusca subtus albicans, collo longitudinaliter maculato, crisso rufescente. Shaw.

The bill is dusky, at the base whitish ; the inside of the mouth is yellow ; irides hazel ; the upper parts are brown, spotted with black ; the breast and belly are dull white ; the throat, sides, and under the wings are tinged with red ; the tail is dusky ; the legs are black.

“ Mr. White observes that the fly-catcher, of all the summer birds is most mute, and the most familiar. It visits this island in the spring, and departs in September. It builds its nest in a vine, or sweet-briar, against the wall

of a house, or on the end of a beam, and sometimes close to the post of a door, where people are going in and out all day long."

We recollect a pair having built on the angle of a lamp-post in one of the streets of Leeds, and there rearing their young.

The nest is formed of bents and moss, and lined with feathers.

The female lays 4 or 5 eggs, marked with rusty spots.

It feeds upon insects, and also likes cherries.

GENUS XXIV.

ALAUDA.

Bill subulate; nostrils partly covered with feathers and bristles; tongue bifid; back-toe claw very long and crooked; motion running, not hopping.

I. ARVENSIS. SKY-LARK, LAVROCK.

A. nigricante griseo rufescente et albido varia, subtus rufo-alba, rectricibus extimis duabus extrorsum longitudinaliter albis, intermediis interiori latere ferrugineis. Shaw.

The bill is dusky; the under mandible yellowish;

the irides are hazel ; the crown which it can erect is dusky, bordered with rufous brown ; the upper parts are reddish brown, dark in the middle, with pale edges ; the fore-part of the neck is reddish-white ; the breast, belly and thighs are white ; the quills are brown, with pale edges ; the tail the same, and forked ; the two middle feathers of which are dark, the outermost white, on the outer edges ; the legs are dusky ; the hind *claw very long and straight*.

The sky-lark forms its nest on the ground, generally between two clods of earth, and lines it with grass and roots.

The female lays 4 or 5 dirty white eggs, spotted with brown ; and often has two broods in the year.

The sky-lark is much valued for its song, and is often kept in a domestic state. Many thousands are also taken in winter when they are fat, for the table.

2. CRISTATELLA.	} LESSER CRESTED	
MINOR. MONT.		LARK, OR FIELD
AGRESTIS. Syn. SHAW.		LARK.

A. capite cristato, corpore supra fusco subtus albicante, remigibus rectricibusque fuscis, pedibus subrubris. Shaw.

The bill is dusky above, white beneath ; irides hazel ; the plumage is light yellowish brown ; the middle of each feather is dusky brown ; the wing coverts are tipped with whitish ; the rump is plain

light brown ; the throat and breast ochraceous yellow, the latter streaked with black ; the belly is yellowish white ; the tail-feathers somewhat pointed, the exterior one half white, the next is slightly tipped with the same ; the legs are yellowish brown ; the claws are horn colour, the hind claw is *short and hooked*. (*Montagu.*)

It is distinguished from the tit-lark, to which it has a near affinity, by the base of the bill, which is broader ; the hind claw is much shorter, and more hooked.

Montague observes, that this species is thinly scattered over the enclosed part of England, and is never met with on moors where the tit-lark frequents ; the song is also superior to that bird, and it is observed never to sing when rising.

It builds its nest amongst high grass, and forms it of dry grass, fibrous plants, lined with horse-hair.

The female lays 4 dirty bluish-white eggs, blotched and spotted with purplish brown.

3. ARBOREA. WOOD-LARK.

A. nigricante griseo rufescenteque varia, capite vitta annulari alba cincto. Shaw.

The bill is dusky, whitish at the base of the upper mandible ; the irides are hazel ; the upper parts are

dusky, margined with a light reddish brown (the head feathers form a crest) a white ring runs round the head; the breast is tinged with red; the belly is whitish; the tail is black, edged with white.

Length 6 inches.

“The wood-lark soars to a great height, and flies in irregular circles, singing the whole time with little intermission, for an hour together. (*Montagu.*)” “Sings in hot summer nights on the wing, night long. (*White.*)”

It builds in march.

The female lays 4 brown eggs, mottled with dusky and cinereous.

3. OBSCURA.	SHAW.	} ROCK-LARK.
PETROSUS.	MONTAGU.	

A. olivaceo-fusca nigricante varia subtus flavicans, lateribus colli pectoreque maculis fuscescentibus, rectrice extima dimidiato, secunda apice albo-cinerascente. Shaw.

The length is $6\frac{3}{4}$ inches; the weight 7 drams.

The bill is dusky; irides hazel; the upper part of the head, back of the neck, and tail-coverts are of a dark brown; the back and scapulars are of the same colour, obscurely marked with dusky strokes; above the eye, and beneath the ear is a lightish coloured stroke; the throat is whitish; the breast and

belly yellowish white, the former blotched with large dusky spots; the sides are marked with strokes of the same; the under tail-coverts are light brown; the two middle feathers of the tail are brown, the others dusky; the outer are of a dirty yellow, white on the interior web; and the point of the exterior in the second feather the light colour is just visible at the end; the quill feathers and coverts are dusky, slightly edged with light brown; the legs and toes are dusky; the claws are dark; *the hind claw four-tenths of an inch long, and somewhat crooked.*

The nest is composed of dry grass, marine plants, and lined with fine grass, and a few long hairs, and is generally placed on the shelf of a rock near the sea.

The female lays 4 or 5 dirty white eggs, speckled with brown. *Montagu, 4 vol. Lin. Trans.*

5. PRATENSIS.

TRIVIALIS. Syn.

SEPIARIA. SHAW.

} TIT-LARK.

A. viridi-fusca, rectricibus duabus extrorsum albis, linea superciliari alba. Shaw.

The bill is slender; irides hazel; the plumage is greenish brown; the throat and under parts are dirty white, spotted with dusky; the wings are brown, edged with a lighter colour; the sides of the tail are white; the legs are brownish.

Length nearly 6 inches.

The tit-lark frequents heaths and moors, and builds its nest of bents and grass, lined with fine grass.

The female lays eggs of a brownish colour, speckled with rufous-brown.

6. RUBRA. RED LARK.

A. obscure fusca, subtus fulvo-rufescens, maculis fuscis varia, genis nigricantibus, superciliis pallide rufis. Shaw.

The red lark is rather superior in size to the skylark.

The bill is dusky above, whitish beneath, except at the point; irides hazel; the upper part of head, hind-part of the neck, and back are rufous brown, each feather a little dusky in the middle; over the eye is a pale ferruginous streak; the chin and throat are the same; the ear-coverts are inclining to dusky; from the bill under the eye is a narrow dusky line; the sides of the neck and breast are ferruginous, with dusky spots; the belly and under tail-coverts are ferruginous white; the greater quill feathers are dusky, slightly edged with yellowish white; the rest of the quills are deeply margined with rufous; some of the large coverts the same; but those immediately impending the secondary quills have whitish tips, making a small bar across the wing; one row also of the smaller coverts are tipped with white, making

another line of that colour across the superior part of the wing; the two middle tail feathers are dusky, deeply margined with rufous brown; the outer feathers are white; the next are white on the exterior web, and a part of the inner web towards the tip; the shaft is dusky; the rest are dusky; the legs are yellowish brown; *the hind claw as long as the toe, and somewhat curved.* (Montagu.)

GENUS XXV.

MOTACILLA.

Beak slender, cylindrical, straight, and slightly notched at the tip; feet simple, 3 toes before, and one behind; the hinder claw rather long.

The tail is long, and constantly in motion; their pace is running, not hopping; their flight undulated.

They build on the ground.

1. ALBA. WHITE WAG-TAIL.

M. pectore nigro, rectricibus duabus lateralibus dimidiato oblique albis. Shaw.

The bill is black; irides hazel; the head, neck, and part of the breast, the middle tail feathers and legs are black; the forehead, cheeks, lower part of breast, belly and outermost tail-feathers are white;

the back, rump and wing-coverts are ash colour, or grey.

The length $7\frac{1}{2}$ inches.

The female is dusky, where the male is black.

The wag-tail migrates partially from north to south, according to the severity of the season.

The black feathers of the chin and throat change to a white in autumn.

The nest is composed of dry grass and moss, and is lined with hair and feathers.

The female lays 5 white eggs, which are spotted with brown.

2. BOARULA. GREY WAG-TAIL.

M. cinerea, subtus flava, rectrice prima tota, secunda latere interiore, alba. Shaw.

The bill is black; irides dark hazel; the crown, neck and back are ash colour; the throat is black in summer, yellowish in winter; the belly is pale yellow; the wing coverts and quills are dark brown, with pale edges; the secondaries are white at the base, tipped with yellow on the outer edges; the middle tail feathers are black; the outer one white; the legs are brown.

Visits us in September, and departs in April.

3. FLAVA. YELLOW WAG-TAIL.

M. pectore abdomineque flavis, rectricibus duabus lateralibus dimidiato oblique albis. Shaw.

The bill is black; irides hazel; the upper parts are olive-green; the under parts are bright yellow; a yellow line passes over each eye; the tail is black, the outer feathers white; the legs are black.

The female is of a less bright colour.

The yellow wag-tail appears in spring, and migrates in September.

It forms its nest of dry sticks, and lines it with hair.

The female lays 4 or 5 pale brown eggs, with dusky spots.

GENUS XXVI.

VITIFLORA.

Beak higher than broad, straight, between the nostrils angulated, and bent down towards the tip; nostrils suboval and depressed; feet with 3 toes before, and one behind; the outer toe connected with the middle one at the base.

1. ŒNANTHE.
 MOTACILLA. } WHITE-TAIL, OR RUMP,
 ŒNANTHE. LIN. } WHEAT-EAR.

*A. dorso cano, fronte superciliis uropygio basique
 caudæ albis, per oculos fascia nigra.* Shaw.

The bill is black; the irides hazel; a black and white line passes across the face; the head and back are bluish grey; beneath is pale buff-colour; the mouth, quills, and upper half of the tail are black, the other half and rump are white.

The wheat-ear appears about the middle of March, and leaves in August.

About 2000 dozen annually are taken on the Downs in Sussex, and are much esteemed as food.

The numbers found about Eastbourne in Sussex, is supposed by Mr. Pennant to be occasioned by a species of fly, their favourite food, that is found on the wild thyme which abounds there.

This bird breeds in old rabbit holes, and forms its nest of dried grass and rabbit down, and lines it with feathers.

The female lays 5 or 6 eggs, of a pale blue colour.

GENUS XXVII.

SYLVIA. SHAW.

MOTACILLA. LIN.

Beak slender, straight, cylindrical; the mandibles nearly equal; nostrils slightly oval; feet simple, with three toes before and one behind.

1. LUSCINIA. NIGHTINGALE.

S. rufo-cinerea subtus cinereo-alba, rectricibus fusco-rufis. Shaw.

The bill is brown; irides large and hazel; plumage above tawny olive; beneath pale ash colour; the quills are brown, edged with reddish; the legs are long, of a pale brown colour.

The nightingale is much esteemed for its song. It appears with us in April, and leaves in August; it is local, rarely been found in the north of England, or Cornwall.

The nest is composed of dry grass and leaves, and is lined with hair and down.

The female lays 4 or 5 greenish brown eggs.

For manner of feeding and keeping, see *Month. Magazine* for 1818.

The organ of voice in birds is at the bifurcation of the trachia, and not in the larynx: it appears by the observa-

tions of Cuvier to depend upon the number of constrictor muscles, and their situation. He found in all singing birds five pairs :—

Two anterior longitudinal contractors.

Two posterior do.

Two small do.

Two oblique

Two transverse

In most birds which do not sing there is in general only one pair.

2. HORTENSIS. GREATER PETTY-CHAPS.

S. griseo fusca, subtus rufo alba, superciliis albidis, remigibus cinereo fuscis, margine griseis, rectricibus fuscis, extima extus et versus apicem intus albida. Shaw.

The bill is dusky, the base of the under mandible is yellowish; irides hazel; the orbits white; plumage light brown, inclining to olive; below the ear is a dash of ash colour; the throat, neck and sides are dirty white, inclining to brown; the belly and under tail coverts white; the quills and tail feathers are dusky, edged with olive; the legs are bluish brown.

The length is 6 inches.

The greater petty-chaps arrives about the middle of April.

It forms its nest of fibrous plants.

The female lays 4 dirty white eggs, blotched with light brown.

3. SALICARIA. SEDGE WARBLER.

S. cinerea, subtus alba, superciliis albis. Shaw.

The bill is dusky; irides hazel; the crown and back are brown, marked with dusky; the rump is tawny; a white stroke runs over each eye; the throat, breast, and belly are white; the wing coverts, quills, tail and legs are dusky; the hind claws are long and bent.

The sedge-warbler builds its nest amongst reeds.

The female lays 5 or 6 light brown eggs, spotted with dusky.

It appears in April, and retires in September.

During the breeding season it sings day and night, imitating the sparrow, swallow, and the sky-lark.

4. ARUNDINACEA. REED WREN.

S. supra olivaceo-fusca subtus albida, loris et orbitis fusco-atbescentibus, angulo carpi subtus luteo-fulva, cauda subcuneata fusca. Shaw.

The bill is dusky above, yellowish beneath; at the corners of the mouth are three long bristles; irides hazel; plumage above olive brown; the under parts are yellowish white; the quills, tail and legs are dusky.

The length is $5\frac{1}{2}$ inches.

The reed wren has generally been confounded with the sedge warbler, but may be distinguished by the following marks. *In the reed wren the base of the bill is broader ; there is no light stroke over the eye, and the upper parts are one plain colour.* (Montagu.)

The nest is composed of long grass, and the seed branches of reeds.

The female lays 4 or 5 greenish white eggs, blotched with dusky.

It appears in April, and retires in autumn.

5. LOCUSTELLA. GRASSHOPPER WARBLER.

S. fusco-viridis, maculis nigricantibus subtus flavescens, pectore saturatiore, cauda cuneata rectricibus apice mucronatis. Shaw.

The bill is dusky, whitish beneath; irides light hazel; the upper parts are olivaceous-brown; the middle of each feather is dusky; the back of the neck is spotted; the eyelids, chin, throat, and belly yellowish white; the breast, sides and thighs inclining to brown; the tail coverts are pale brown; the quills and tail are dusky brown; the legs are pale brown; the claws are light horn colour; the hind claw is short and crooked.

This species is distinguished from the sedge warbler by its *spotted back*.

The nest is composed of dried stalks and goose grass, and lined with fibrous roots.

The eggs are bluish white.

“ It is rare ; concealing itself in furze and thick hedges ; and discovering itself by its note, exactly resembling that of the mole-cricket. : (*Gryllotalpa vulgaris.*”) (Montagu.)

6. CINEREA. WHITE THROAT, OR NETTLE-CREEPER.

S. supra cinerea, subtus alba, rectrice prima longitudinaliter dimidiato alba, secunda apice alba.
Shaw.

The bill is dusky brown above, white beneath ; irides yellowish ; the whole upper parts from head to tail are cinereous brown ; the wing coverts the darkest, bordered with brown, inclining to rufous ; the quills are dusky, slightly edged with cinereous brown ; the under parts from chin to tail are greyish white, the darkest on the breast and thighs ; in some the breast has a rosy tinge ; the tail is like the quills ; the outer feathers white, except at the base of the inner web ; the legs are pale brown. (Montagu.)

The white throat arrives in spring, and migrates in autumn.

It forms its nest of goose grass, fibres and hair.

The female lays 4 or 5 light brown or ash coloured eggs.

7. SYLVIELLA, LESSER WHITE THROAT.

S. cinereo-fusca subtus sordide alba, rectricibus duabus intermediis brevioribus subulatis. Shaw.

The bill is dusky; irides yellowish, with a dash of pearl colour; the upper part of the head is ash colour; all the other upper parts are cinereous brown; the quills and tail are dusky, edged with ash colour; from the throat to the vent, including the under tail coverts, silvery white; the exterior feather of the tail is whitish almost to the base; the outer web is quite white; the legs are dusky lead colour.

Length $5\frac{1}{4}$ inches.

The lesser white throat arrives about the latter end of April, and builds a nest much like the common white throat.

The female lays 4 or 5 bluish white eggs, speckled over with brown and ash colour.

8. ATRICAPILLA. BLACK-CAP, OR MOCK NIGHTINGALE.

S. testacea, subtus cinerea, pileo obscuro. Shaw.

The bill is brown; irides dark hazel; the crown is black; (in the female dull rust colour) the hind part of the neck is cinereous; the back and wings are

olive grey ; the throat and breast are silvery grey ; the belly and vent are white ; the legs are lead colour.

The black-cap appears in April, and retires in September.

Its song is much admired, being reckoned the next in sweetness to the nightingale.

It forms its nest of goose grass, wool and moss, and lines it with fibrous roots.

The female lays 4 or 5 pale reddish brown eggs, sprinkled with ash colour.

9. MODULARIS. HEDGE SPARROW, WINTER
FAUVETTE, OR DUNNOCK.

S. supra griseo-fusca, tectricibus alarum apice albis, pectore cærulescente-cinereo. Shaw.

The bill is blackish ; irides reddish ; plumage dusky brown ; the back and wing feathers are edged with reddish brown ; the cheeks, throat, and fore-part of the neck are dull bluish ash colour ; the belly is dirty white ; the quills and tail are dusky ; the rump greenish brown ; the legs are brown.

The hedge sparrow builds its nest near the ground of green moss and wool, and lines it with hair.

The female lays 4 or 5 blue eggs.

10. PHŒNICURUS. RED-START.

S. gula nigra, abdomine caudaque rufis, capite dorsoque cano. Shaw.

The bill is black; the irides hazel; the forehead is white; the crown of the head, hind-part of the neck and back are deep bluish grey; the cheeks and throat are black; the breast, sides and rump are rusty red; the tail is red, except the two middle feathers, which as well as the wings are brown; the legs are black.

The female is light brown; the head and neck grayish; the chin whitish; the breast and sides are rufous.

The young are speckled, the tail only red.

The nest is composed of moss, and lined with feathers and hair.

The red-start appears early in April, and departs in September.

11. RUBETRA. WHINCHAT.

S. nigricans, superciliis albis, macula alarum alba, gula pectoreque flavescente. Shaw.

The bill is black; the irides hazel; the head, neck and back are black, edged with rust colour; a streak of white passes over each eye; the cheeks are black-

ish ; the chin is white ; the breast is of a rust colour ; the belly and vent are pale buff ; the wings are crossed by two white marks ; the tail is white at the base, the rest black ; the legs are black.

Length 5 inches.

The female is paler.

The whinchat is a solitary bird, frequenting heaths and moors.

It makes its nest at the roots of bushes, and lays 5 eggs, of a light blue colour.

It migrates partially in winter from north to south.

12. RUBICOLA. STONE-CHAT.

S. grisea, subtus rufescens, jugulo fascia alba, loris nigris. Shaw.

The bill is black ; irides hazel ; the head, neck and throat are black, mixed with brown ; on each side of the neck is a white spot ; the wing coverts and back are velvet black, margined with reddish brown ; a white spot on the wings ; the breast is rust colour ; the tail is black, tipped and edged with brown ; the legs are black.

Length 5 inches.

Its habits are much like the whinchat.

The female breeds about the end of March, and lays 5 or 6 eggs, of a greenish colour, spotted with rufous.

13. RUBECULA. RED-BREAST.

S. grisea, gula pectoreque ferrugineis. Shaw.

The bill is slender and black; the irides are large and dusky; the plumage is yellowish brown; the breast deep rufous-orange; the belly and vent are whitish.

Both sexes are alike.

Length 6 inches.

The red-breast builds its nest at the bottom of some thick shrub: it is composed of leaves, moss and feathers.

The female lays from 5 to 7 dirty white eggs, spotted with rust colour.

Its food is worms and insects, which it never eats alive, but beats them with its bill against the ground until they cease to move.

14. DARTFORDIENSIS. DARTFORD WARBLER.

S. spadicea, subtus ferruginea, abdominis medio, remigum margine, alis spuris, et rectricum, extimarum exteriori latere albis, palpebris rubris.
Shaw.

The bill is long and slender, black, with the base white; irides yellow; the eye-lids are deep crimson (*Bewick*) yellow, (*Montagu*) the upper parts are

dusky brown; the breast and part of the belly deep ferruginous; the middle of the belly is white; the tail is long and dusky; the exterior web of the outer feather is white; the legs are yellow.

Var. throat speckled with white.

The young and the female are more rufous.

Rare, found in Cornwall. See *Lin. Trans.* vol. 7. 280.—vol. 9. 191.

15. TROCHILUS. YELLOW WREN.

S. cinereo-virens, alis subtus reticibusque flavescen-
tibus, superciliis luteis. Shaw.

The bill is brown, with yellow edges; irides hazel; the upper parts are yellow, inclining to olive green; the under parts are pale yellow; the quills are dusky brown, edged with yellow; the tail is the same; over the eye is a faint yellow stroke; the legs are light brown.

The yellow wren appears in April, and departs in autumn.

The nest is composed of moss and dried grass, lined with feathers.

The female lays 6 or 7 white eggs, spotted with rust colour.

It is distinguished from the lesser petty-chaps by its size, 5 inches and a quarter; and by the colour of its legs.

16. HIPPOLAIS. LESSER PETTY-CHAPS.

*S. virescente-cinerea, subtus flavescens, abdomine al-
bido, superciliis albidis.* Shaw.

The plumage much resembles that of the yellow wren; the difference is in its general colour, not being so much tinged with yellow; the legs are dusky. *Montagu.*

The length is $4\frac{1}{2}$ inches.

The lesser petty-chaps appears about the first of April, and departs in October.

The nest is composed of dry leaves, coarse grass, and is lined with feathers.

The female lays 6 white eggs, speckled with purplish red.

17. SYLVICOLA. WOOD WREN.

S. virescens subtus flavescens, superciliis luteis, abdomine crissoque niveis. Shaw.

The bill is dusky; irides hazel; the upper part of the head, back, scapulars, wing coverts, and upper tail coverts are of a lively yellow green; over the eye is a bright brimstone coloured streak; the cheeks and throat are yellow; the upper part of the breast is white, tinged with yellow; the lower part, belly, and under tail coverts are pure white; the quill fea-

thers are dusky, edged on their exterior webs with yellow green ; the tail is a little forked, and coloured like the quills, except the outmost feathers, which want the yellow margin ; the legs are yellowish brown.

The length is $5\frac{1}{4}$ inches.

The wood wren appears in April, and departs in September.

It has been confounded with the lesser petty-chaps and the yellow wren, and is distinguished by its superior size to the latter, and pure whiteness of the under tail coverts, and brighter yellow stroke above the eye.

The nest is placed on the ground, of an oval shape, with a small opening at the top ; it is constructed of dry grass, a few dead leaves, and a little moss, and invariably lined with finer grass, and a few long hairs.

18. REGULUS. } GOLD-CRESTED
REG. VULGARIS, SHAW. } WREN.

R. virescens, remigibus secundariis exteriori margine flavis, medio albis, vertice luteo. Shaw.

The bill is slender and dark ; irides hazel ; the crown is bright orange, bordered with black ; the upper parts are yellowish green ; the under parts are reddish white, tinged with green ; the wings are dusky brown, edged with yellow and white ; the quills are dusky ; the legs are yellowish brown.

Length $3\frac{1}{2}$ inches, weight 76 grains.

The colours of the female are less vivid than those of the male.

This is the smallest British bird, and is chiefly found in woods.

Its nest is composed of moss, and lined with wool; it is of a round form, with an opening on one side.

The female lays 6 or 7 white eggs, spotted, scarcely larger than a pea.

19. TROGLODYTES.

TROG. EUROPÆUS, SHAW. } COMMON
WREN.

T. griseus, alis nigro cinereoque undulatis. Shaw.

The bill is slender and curved, of a horn colour, beneath yellow; irides dark; the upper parts are clear brown, waved with pale and dark brown; the throat is dingy white; the cheeks and breast are the same, dappled with brown; the quills and tail marked with alternate bars, of reddish brown and black; the legs are olive brown.

The nest of the common wren is curiously constructed, of an oval shape, with one small entrance. It is formed of moss, and invariably lined with feathers, its outside being adapted to the substance against which it is placed; if against a mossy tree, it is covered with lichen.

The female lays from 10 to 18 dirty white eggs, spotted with red.

GENUS XXVIII.

PARUS.

Bill strong, entire, base covered with reflected bristles; tongue truncated, the end terminated with bristles; feet simple, 3 toes before and one behind.

1. MAJOR. GREAT TITMOUSE, OR OX-EYE.

P. viridi-olivaceus subtus flavescens, capite nigro, temporibus albis, nucha lutea. Shaw.

The bill is black; irides dusky; the head and throat are black; the cheeks white; the back is olive green; the rump blue grey; the quills are dusky; the greater are edged with white, the lesser with pale green; the belly is greenish yellow; the legs are lead colour.

The length is 5 inches.

The ox-eye begins to pair early in spring, and builds its nest in the hole of a tree. It is composed of moss, and lined with hair.

The female lays 6 or 8 eggs, which are white spotted with rust colour.

During spring titmice are frequently observed searching for the larvæ of the tortrices so abundant among the opening buds of fruit-trees, thus benefitting man in a very considerable degree. But their services are no better re-

garded than those of other small birds, the thoughtless gardener supposing them the enemies of his blossoms, destroys them without mercy.

2. CÆRULEUS. BLUE TITMOUSE.

P. olivaceo virescens subtus luteus, remigibus cærulescentibus, primoribus margine exteriori albis, fronte alba, vertice cæruleo. Shaw.

The bill and irides are black; the cheeks are white; the crown and line under the cheeks are fine blue; from the bill through the eye is a dark line; the back is yellowish green; the wings and tail are blue, the under parts are pale yellow; the legs are lead colour.

The blue titmouse is omnivorous, greedily devouring flesh as well as insects; nay even destroying small birds. It is remarkable for its enmity to the owl, the eyes of which it furiously attacks.

This species is also said to hiss like a snake when disturbed on its nest.

3. PALUSTRIS. MARSH TITMOUSE.

P. capite nigro, dorso cinereo, temporibus albis Shaw.

The bill is dusky; irides hazel; the crown is black, but not glossy; the cheeks are dirty white; the chin is black; the back rusty gray; the breast and belly

are light brownish buff colour; the quills and tail are bluish grey; the legs are lead colour.

The nest is formed of moss, and lined with thistle down.

The female lays 5 or 6 white eggs, spotted with rusty red.

4. ATER. COLE TITMOUSE.

P. dorso cinereo, capite nigro, occipite pectoreque albo. Shaw.

The bill is dusky; irides hazel; the crown, throat, and part of the breast are glossy black; from the corner of the bill an irregular patch of white passes under the eyes, also a spot on the hind-part of the head; the upper parts are greenish ash colour; the wing coverts are tipped with white, which forms two bars across the wings; the under parts are yellowish white; the legs are lead colour.

The nest is composed of moss and wool.

The female lays 6 or 7 white eggs, spotted with red.

5. CAUDATUS. LONG TAILED TITMOUSE.

P. albo roseo nigroque longitudinaliter varius, vertice albo, cauda longiore. Shaw.

The bill is short and black; irides hazel; the

edges of the eyelids are yellow; the crown white, surrounded by black, which unites behind the head and passes down the back; the cheeks, throat, and breast are white; the belly, sides, rump and vent are dull rose colour; the wing-coverts are black, those next the body are white, edged with rose colour; the quills are dusky; the tail is black, the outer feathers are edged with white; the legs are black.

The nest is composed of white moss and liverwort, and lined with feathers, with a small aperture on one side.

The female lays 10 or 12 grey eggs, mixed with red.

6. BIARMICUS. BEARDED TITMOUSE.

P. rufus vertice cano, capite barbato, crisso nigro, cauda corpore longiore. Shaw.

The bill is orange; irides yellow; the head is pearl-grey, with a tuft of black feathers below each eye; the throat is silvery white; the back, rump and tail are light rust colour; the breast is flesh colour; the quill feathers are dusky; the secondaries and tail feathers are edged with white; the legs are black.

The bearded titmouse inhabits reedy marshes.

The female, which is distinguished from the male

by the want of the black mark on each side of the head, lays 5 reddish white eggs, spotted with brown.

7. CRISTATUS. CRESTED TITMOUSE.

P. griseo rufescens cristatus, collari nigro, ventre albo. Shaw.

The bill is dusky; irides hazel; the forehead and crown are white, undulated with black lines; on the hinder part of the head the feathers are very long and black, which the bird erects in the form of a conic crest; the cheeks are dirty white, spotted with black; a black stroke crosses the cheek under the eye, which turns back in an acute angle under the ear forming the letter Y; behind this is a bed of white surrounding the cheeks, and bounded externally by a black edge, which forms a patch on the hind-head, and also joins the black on the throat and chin; the back is greenish brown; the breast and belly are pale buff; the wings and tail are much like the back, but deeper coloured; the legs are bluish lead colour. (*Montagu.*)

The crested titmouse is found in the pine forests of Scotland.

The eggs are said to be white, spotted with red.

GENUS XXIX.

HIRUNDO.

Beak small, bent downwards, pointed and depressed at the base ; gape extremely wide ; tail forked.

1. RUSTICA. COMMON SWALLOW.

H. nigro-cærulescens subtus albida, fronte gulaque castaneis, rectricibus duabus intermediis exceptis, macula alba notatis. Shaw.

The beak and mouth are black ; irides hazel ; the forehead and chin are chesnut red ; the top of the head and whole upper parts of the body are black, glossed with purplish blue ; the upper part of the breast is black ; the lower part and belly white ; the tail feathers are marked with a white spot ; the legs are short.

In the female the tail-feathers are shorter than in the male.

The young birds have not the forked tail, nor the white spot on the tail-feather.

The nest and bodies of the common swallow are much infested with an insect called

Hippobosca Hirundinis by Lin.

Stenepteryx Hirundinis of Leach.

The common swallow appears about the latter end of March, and leaves about the end of September.

It builds its nest in chimneys, or under the eaves of houses. The nest is of a cylindrical shape, constructed of mud, mixed with straw and hair, and lined with feathers.

The female lays 5 or 6 eggs, which are white, speckled with red.

The swallow often breeds twice a year.

White Swallow.—Dr. Traill of Liverpool communicated to the Edinburgh Philosophical Journal, No. 4., p. 391, the following fact:—

“On 22d Aug. 1819, I found in a nest of the *hirundo rustica*, at Greenbank, near this town, a perfectly white swallow, fully fledged. The nest contained another young bird of the usual colour. The plumage of the former was pure snow-white, with a gloss like satin on the head, neck, wing-coverts and back. The animal was a perfect *albino*, having red eyes, pale reddish beak and legs. On replacing it in the nest, it speedily fled away, but was instantly attacked by fifty or sixty common swallows, that appeared to peck at and buffet it so cruelly, that it took refuge in a tree, from which it was not easily raised. On again essaying its wings, its persecutors assembled round it in great numbers, accompanying it until distance concealed it from our sight. A few days after it was shot near its former habitation, and both it and its brother swallow are now in my possession.”

“ Swallows are easily distinguished from all other birds, not only by their structure, but by their twittering voice and manner of life, they fly with great rapidity, seldom walk, and perform all their functions on the wing or sitting; they entirely subsist on insects, which they readily catch, by means of their wide mouth, on the wing. Mr. White informs us that for some weeks before the swallows depart, they, without exception, forsake houses and chimneys, and roost in trees. This takes place about the latter end of September.”

2. RIPARIA. SAND MARTIN.

H. murina, gula abdomineque albis. Shaw.

The beak is dusky; irides hazel; plumage above is mouse colour, beneath white; the feet are black.

Length 5 inches.

“ The sand martin arrives in March; it is common about the banks of rivers and sand-pits, where it digs itself a round and regular hole in the sand or earth; this is horizontal, winding, and generally about two feet deep. At the further end of this burrow the bird constructs its nest of grass and feathers. The female lays from 4 to 6 white and transparent eggs, and often has two broods in a year.”— See Mr. White’s *History of Selborne*, and *Naturalist’s Calendar*.

3. URBICA. MARTIN.

H. nigro-cærulescens subtus uropygioque albis, rectricibus immaculatis. Shaw.

The bill is black; the irides hazel; the head and back are purplish black; the breast, belly, and rump are white; the feet are covered with white down; the mouth is yellow.

The Martin arrives in April, and retires the latest of any species.

It builds its nest under the eaves of houses; it is composed of mud and straw.

The female lays eggs of a pure white, and often breeds three times in a season, having about 5, 4, or 3 young.

4. APUS.

CYPSELUS

VULGARIS, SHAW.

} SWIFT, OR BLACK MARTIN.

A. nigricans, gula alba. Shaw.

The beak is black; the irides hazel; the whole plumage is sooty black, except a white spot on the chin; the feet are very short.

Weight 1 oz. expands 18 inches.

It builds in towers or steeples, and forms its nest of dry grass and feathers.

The female lays 2 white oblong eggs, and only breeds once in the season.

This species visits us about May, and retires in August.

GENUS XXX.

CAPRIMULGUS.

Bill short, hooked, base beset with bristles, mouth wide; tongue small entire; toes connected by a membrane to the second joint; legs short, middle claw serrated; tail of ten feathers.

1. EUROPÆUS. GOAT SUCKER, NIGHT-JAR, OR FERN OWL.

*C. niger cinereo fusco ferrugineo alboque varius, sub-
tus albo rufescens fasciis fuscis.* Shaw.

The mouth is purple; the whole plumage consists of a most beautiful intermixture of black, brown, rust colour, and white, beneath it is reddish, with brown bands.

The male has an oval white spot on the inner web of the first three quill feathers, and at the tip of the two outer tail feathers.

The goat sucker is a migratory and solitary bird, appearing with us about the middle of May, and retiring in September or October.

It makes no nest, but lays two oval whitish eggs,

marbled with light brown on the bare ground amongst heath or fern.

It frequents woods, and feeds in the evening on beetles.

It chatters by night, with a singular noise.

“ We have witnessed the singular manner in which this bird takes its prey, consisting of moths and beetles, which it pursues with great agility on the wing, occasionally throwing itself backwards, and thrusting out its foot, with which it seizes and conveys them to its mouth with great deliberation: probably its serrated claws may assist this operation.” *W.*

ORDER IV. COLUMBÆ.

Base of the bill covered with a soft tumid membrane, the tip arcuated.

Stomach muscular, or furnished with a gizzard.

GENUS XXXI.

COLUMBA.

Bill weak, straight, slender, a little bent at the apex; nostrils oblong, half covered by a soft tumid membrane; tongue entire; legs short.

Dr. Fordyce has proved by experiments, that all birds, especially during the time of laying, require a certain quantity of calcareous matter for the perfect formation of their egg-shells.

In opposition to this opinion, however, Dr. Paris, in the 10th vol. of *Lin. Trans.* says, "That a deficiency of calcareous matter in the system is the cause of the absence of the shell, no one will deny; but that it depends on some internal state, and not on the privation of lime, may be shewn by the following circumstance. A hen, which I kept for some experiments, had its leg broken in two parts. The fracture was carefully bandaged; three days subsequent to which several eggs, destitute of shells, were formed on the premises. The hen had deposited no perfect eggs, nor were there any other birds from which those yolks could have proceeded. I therefore conjectured that all the calcareous matter designed for the formation of the shell had been employed in the regeneration of the bone."

Pigeons are particularly fond of carbonate of lime: this instinctive partiality probably arises from their frequent incubation.

Vanquelin found the dung of the pigeon to contain a peculiar acid, which is increased by the mixture of the fœces with water.

Birds having no urinary bladder, this fluid is received into the rectum together with the fœces. The termination of the gut is called cloaca, from this circumstance. Connected with the rectum in most species is a bag or purse, called after its discoverer *bursa fabricii*, which secretes a thick mucus: its structure is curious, and worthy of minute examination.

1. **ÆNAS.** STOCK PIGEON, OR DOVE.

C. cærulescens, cervice viridi-nitente, dorso postico cinerascens, fascia alarum duplici apiceque caudæ nigricante. Latham's *Index Ornithologicus*.

The bill is pale red; the irides yellowish red; plumage bluish ash colour; the breast tinged with purple; two black bars on the wings, and one near the tail; the back white; the legs red, with black claws.

The female lays 2 white eggs.

They build both in trees and in holes in the cliffs near the sea, and commonly have two broods in a year.

Montague observes that they greedily devour some species of testaceous *limaces*, especially *helix virgata*, which so plentifully inhabits the dry rocky hills contiguous to where the bird breeds.

It has been observed that pigeons do not sip water as other birds, but take, like quadrupeds, a continued draught.

2. **PALUMBUS.** RING DOVE.

C. cinerea, rectricibus postice atris, remigibus primoribus margine exteriori albidis, collo utrinque albo. Lath.

The bill is red; the irides yellowish red; above bluish ash colour; the breast is tinged with purple;

the belly dirty white; on the back of the neck is a semilunar white line; the legs are red, partly covered with feathers.

The length 18 inches, weight 2oz.

The female lays 2 white eggs, in a nest composed of twigs.

They feed upon wild fruits, herbs, &c. In several which we opened in June, the crops were full of the immature oak-apple. (*The nest of the cynips quercifolia.*)

3. TURTUR. TURTLE DOVE.

C. rectricibus apice albis, dorso griseo, pectore incarnato, macula laterali colli nigra lineolis albis.

Lath.

The bill is brown; the irides yellow, encompassed with a crimson circle; the crown and back are ash colour, mixed with olive; on the sides of the neck a black spot, edged with white; the wings are brown; the breast is purple, mixed with yellow; the belly is white; the feet are red; the claws black.

Length 12 inches.

The turtle dove arrives late in the spring, and departs about August.

The female lays 2 white eggs, in a nest formed of sticks.

During the time of breeding, both parents assist in feeding their young. For this purpose the coats of the crop put on a glandular appearance, and for the first 8 or 9 days secrete a substance much resembling the curd of milk: this is at first thrown up pure, and supplied to the young in that state: it is then mixed with the common food in less proportion until its secretion ceases.

It is also curious that the testes of male birds in general become almost obliterated after the season for incubation, and remain so until spring, when they again become turgid.

4. LIVIA. ROCK PIGEON.

C. cinereo-cærulescens, fasciâ alarum duplici nigrâ, dorso inferiore albo, pectore vinaceo, apice caudæ nigricante. Shaw.

“ The head, the upper part of the back, the wing-coverts, the breast and the belly, are grey striped with bluish; the wing-coverts being darkest; the lower part of the back is white; the neck is of a fine green, with rich reflections; the greater feathers of the wing are dusky; the secondaries and the greater coverts are grey, with blue markings; they are terminated with black, and form on each side two transverse bands of that colour; the tail is similar to the body; the whole of its feathers are dusky, and the outer one on each side has its exterior web white; the beak is of a pale red; the feet are red, and the claws black.” (*Shaw.*)

Length 12 inches.

The rock pigeons have two broods in the year, and they lay their eggs in nests formed in holes of rocks and ruined towers.

The columba cenas, or stock-dove, is generally supposed to be the species from whence the innumerable varieties of domestic pigeons have sprung; but the livia is undoubtedly their origin. Mr. White in his History of Selborne, observes that "the stock-dove is larger than the common house-dove, against the usual rule of domestication, which generally enlarges the breed. Again, those two remarkable black spots on the remiges of each wing of the stock-dove, which are so characteristic of the species, would not, one should think, be totally lost by its being reclaimed; but would often break out among its descendants." (See *Willoughby's Ornithology*, and *More's Columbarium*)

ORDER V. GALLINÆ.

The bill is convex; the upper mandible arched; the toes are connected by a membrane at the bottom; tail-feathers more than 12.

Birds of this order are furnished with a thick muscular stomach called a gizzard; which grinds down by its action the seeds of plants such as peas, beans, &c. before the gastric juice can act upon them, so powerful is its effects, that Spallangani found glass spheres, angular pieces of glass, needles, and even sharp lancets fixed in leaden balls broken to pieces, or pulverized.

It appears further, that bread or pieces of flesh, by being merely moistened in the crop, are acted upon by the gastric juice, and digested. It was formerly supposed that the bits of quartz which are found in the gizzard, assisted greatly this trituration ; it does not, however, appear to be the case, as the above author found that the gizzard possessed the power within itself.

“The young of many species included under this order are subject to a disease in the *trachia* called *oscitans*, or the gapes, which is produced by a worm of the genus *fasciola* ; the only effectual remedy is tobacco smoke.” (*Wern. Transac. vol. 1. 194.*)

GENUS XXXII.

PHASIANUS.

The bill is short, strong and convex ; the sides of the head is bare, carunculated ; legs most commonly furnished with a spur.

1. COLCHICUS. PHEASANT.

Ph. rufus, capite cæruleo cauda cuneata, genis papillosis. Lath.

The bill is a plain horn colour ; the nostrils are hid under an arched covering ; the irides are light yellow, surrounded in the male by a red space much resembling a piece of scarlet cloth, finely spotted

with black; a tuft of black feathers near the ears; the head and neck are tinged with rich green-gold, blue and violet; the lower part of the neck and breast are rufous, spotted with black; the back and scapulars are variegated with cream-coloured spots; the quills are dusky, tail of 18 feathers; the two middle ones are about 20 inches long, reddish brown, with transverse black bars; legs dusky, with a sharp short spur.

The female is much less vivid in colour, being light and dark brown, mixed with black; round the eye covered with feathers.

Weight 45oz. length 36 inches.

Var. the ring pheasant, distinguished by a white ring encircling the neck.

Pheasants are much esteemed for the table.

The hen pheasant lays from 18 to 20 eggs upon the ground.

The young are fond of the eggs of ants.

2. GALLUS,
G. DOMESTICUS, SHAW. } DOMESTIC COCK.

G. carunculâ denticulatâ ; ore subtus barbato ; pennis colli linearibus elongatis ; corpore pulchris coloribus variegato ; caudâ compressâ adscendente.
(*Femina, cristâ barbâque minores quam maris.*)

The dung-hill fowl is supposed to be a native of Asia, but is now domesticated in every part of the world, and forms innumerable varieties.

“ The fecundity of the hen is great; she generally lays 2 eggs in three days, and continues to lay through the greater part of the year, except the time of moulting.” She lays 25 or 30 eggs before she prepares to sit. The period of incubation is 21 days; the heat required to hatch the eggs, and which is the heat of her body at the time of sitting is 104° of *Fahrenheit*.

The young chick when ready for hatching, is provided with a small hard calcareous protuberance at the point of the bill, by which it is enabled the more readily to break the shell, and which falls off some hours after hatching.*

* The egg or ovum of birds, consists of the following parts: The shell, *putamen*; the external membrane, *membrana albuminis*; air cell, *folliculus æeris*; the white, *albumina*; the yolk, *vitellus*; and the white spot on the superior surface of the yolk, *cicatricula*.

Chemical analysis from Thomson's Dispensatory.

The *shell* consists of carbonate of lime, phosphate of lime, and animal mucus. When it is burnt, the carbonic acid is dissipated, the animal cement destroyed, and pure lime, with phosphate of lime obtained.

The *white* is inodorous and insipid, of a glary viscid nature, readily dissolving in water, coagulable by a heat of 165° Fahrenheit, and also by acids and alcohol. When coagulated it becomes sapid, and is no longer soluble either in cold or hot water. From the experiments of Dr. Bostock, it appears to be composed of water 80.0, albumen 15.5. and mucus 4.5, in 100 parts; and besides shows traces of soda, sulphureted hydrogen gas, and benzoic acid.

The *yolk* is also insipid, but has a bland oily taste; and when agitated with water, forms a milky emulsion. When boiled it becomes a granular solid, and yields by expression a yellow insipid fixed oil. It consists of four constituents, water, oil, albumen and gelatine; on the presence of the albumen depends the hardness of the boiled yolk.

The air cell is a circular space left between two layers of the external membrane at the larger end of the egg, and is supposed to be designed for the respiration of the chick.

Dr. Paris in a valuable paper on the Physiology of the Egg, in 10th vol. *Lin. Trans.* says,

“I have uniformly found that the folliculus æris is of greater magnitude in the eggs of those birds which place their nests on the ground, and whose young are hatched, fledged, and capable of exerting their muscles as soon as they burst from their shell, than in the eggs of those whose nests are generally built on trees, and whose progeny are born, blind and forlorn. Thus the folliculi in the eggs of fowls, partridges, and moor hens are of considerable extent, whilst those in the eggs of crows, sparrows and doves are extremely contracted; the chick, therefore, of fowls and partridges have a more perfect plumage, and a greater aptitude to locomotion, than the callow nestlings of doves and sparrows.

It is curious to observe a bird on its perch and at rest; it is not by any voluntary action which it exerts by which it is prevented from falling when asleep; it is by the pressure of the body upon the legs by which the flexor tendons of the feet are compelled to embrace the branch upon which it is seated.

For a new method of rearing poultry to advantage, see the 25th vol. of the *Trans. of the Society of Arts*.

GENUS XXXIII.

TETRAO.

Bill short, convex, strong, a bare scarlet spot above the eyes ; nostrils hid in the feathers ; legs feathered to the feet.

1. UROGALLUS. WOOD GROUSE, OR CAPER-
CAILE.

F. fusco-rufus, capite colloque cinereis, gula abdomineque nigris, axillis albis. Lath.

The bill is horn colour ; irides hazel ; plumage above streaked with transverse black and grey lines ; the breast is black, glossed with green ; the tail consists of 18 feathers, black with white spots ; the legs are stout, furnished with a pectinated membrane.

Its length is 32 inches, weight 13lb.

The female is less ; the throat is red ; the head, neck and back are barred with red and black ; the belly is pale orange ; the tail is rust colour, barred with black and tipped with white.

The cock of the wood was formerly plentiful in Scotland and Ireland.

It feeds upon the berries of Juniper and seeds of the Fir.

The female lays from 8 to 16 white eggs, spotted with yellow.

The trachia of this fine species is longer than the neck; it passes in a straight direction downwards as far as the crop, where it takes a bend upwards, and again turning downwards, goes to the lungs in the usual way.

2. TETRIX. BLACK GROUS, OR BLACK COCK.

T. nigro-violacea, cauda bifurca, remigibus secundariis versus basin albis. Lath.

The bill is black; irides dark blue; a white spot runs below each eye; the plumage is deep black, richly glossed with blue on the neck and rump; the thighs and legs are dark brown; the tail of 16 feathers, and forked.

Length 22 inches, weight 4lb.

The female is less, and the tail less forked; her plumage is mixed with red. She makes her nest on the ground, and lays 6 or 8 yellowish eggs, spotted with rusty brown.

The black game are chiefly found in the mountainous parts of Scotland and Wales, where they feed upon berries and fruits: they do not pair, but on the return of spring the males assemble in numbers, when the contest for superiority commences, and is continued with great fury till the vanquished are put to flight; the victors by clapping their wings, and by loud cries, give notice to the females, who resort to the spot.

The black grouse are infested with an insect called by Linneus, *Hippobosca avicularia* (the *Ornithomyia avicularia* of Leach.)

Mr. Samouelle in his valuable *Entomologists Compendium*, observes, page 142.

“It is almost an established fact, that every species of bird has its own parasite; and there is no instance of the same species of louse having been observed on two distinct species of birds; although some birds, (as the raven, oystercatcher, &c.) are infested with several species of parasites.”

3. SCOTICUS.

LAGOPUS

SCOTICUS, SHAW. } RED GROUSE, GOR-COCK,
OR MOOR-COCK.

T. rufo et nigricante transversim striatus, rectricibus sex utrinque exterioribus nigricantibus. Lath.

The bill is black; irides hazel; there is a white spot at the base of the lower mandible; the throat is red; the head and neck tawny red, mixed with black; the back is red, with black spots; beneath is purplish brown, striated with dark lines; the tail has sixteen feathers; the thighs are pale red.

In the female the belly is spotted with white, and the naked skin above each eye is less conspicuous than in the male.

The red grouse are found on the northern moors.

The female lays 8 or 10 eggs.

The young are called poults, and follow the mother

until winter, when several families unite, and are known to sportsmen under the name of packs.

4. LAGOPUS. } WHITE GROUSE, PTAR-
L. MUTUS, SHAW. } MIGAN.

T. cinereo alboque varius, pedibus lanatis, remigibus albis, rectricibus nigris, apice albis, intermediis albis. Lath.

The bill is black; the upper parts are pale brown and ash colour, with dark spots; the under parts are white.

In winter they are entirely white, except in the male there is a black line between the bill and the eye.

The female deposits her eggs on the ground; they are white, spotted with brown: she lays 8 or 10.

It is a curious fact, that the feathers of birds often change their colour according to the seasons; this has generally been supposed to arise from its moulting,* or casting the

* "It is generally supposed that birds cannot live without feathers, or that they linger out a miserable existence for a few days or weeks; this, however, does not appear to be true, for we find it stated in the Memoirs of the Society of Natural History of Wetterau, that a Mr. Schœpf of Gottorf reared a featherless canary-bird, which continued living and in good health for upwards of three years." *Edinburg Phil. Journal*, No. 3. p. 191.

feathers; this may be the case in some measure; the change, however, to which we allude, probably arises from the colouring matter ceasing to circulate during the excessive cold of winter; hence the black of the razor bill will become partially white at that season, and on the return of spring will be restored to its original dark hue.

The gentlemen who engaged to visit Orkney for the express purpose of procuring birds, and enquiring into the habits of such species as cannot be found inland, particularly observed this change in the following genera:—

Scolopax, larus, anas and uria; and probably it may be the case with the ptarmigan, which they never met with.

Mr. Simmons in the 8 vol. *Lin. Trans.* p. 269, mentions a supposed *lusus naturæ* found in this species; namely, the trachia was enlarged at the division of the bronchiæ.

GENUS XXXIV.

PERDIX.

Bill convex, strong and short; nostrils covered above with a callous prominent rim. No naked skin above the eyes; but in some species more or less warty excrescences round the eyes; legs naked, some species furnished with spurs behind; tail short.*

* Near Sherbourn, Yorkshire, in October 1814, were shot from the same covey, five birds having their bills so much curved upwards as to expose nearly half of the roof of the mouth, so as entirely to prevent the two mandibles coming in contact; they were young birds of that year, and in full health and well fed. *W.*

1. CINEREA. COMMON PARTRIDGE.

P. calcarata, cinereo rufo et nigro varia, macula nuda coccinea suboculis, cauda ferruginea, pectore brunneo. Lath.

The bill is light brown; irides hazel; the general plumage is brown and ash, mixed with black, each feather being marked down the middle with buff; a semilunar mark crosses the breast; the tail is short of 18 feathers; the legs are greenish, with a small protuberance behind.

Weight 15oz.

The female has no crescent on the breast.

The partridge pairs at the latter end of February.

The female lays her eggs, from 15 to 20 in number, in a nest of dry leaves and grass, placed on the ground. The eggs are of a grey colour.

The young feed chiefly on the grubs of ants.

2. COTURNIX.

C. DACTYLISONANS, SHAW. } THE QUAIL.

P. mutica, corpore griseo maculato, superciliis albis, rectricibus margine lunulaque ferruginea. Lath.

The bill is dusky; irides hazel; the head is black, a yellow line runs from the crown to the back; the chin and throat are whitish; the breast is pale orange

spotted with black; the back is black and yellow; the tail has 12 feathers, black and red.

The female wants the black spot on the breast.

She lays her eggs on the ground; they are of a grey colour, spotted with brown, and in number 6 or 7.

The quail migrates.

3. RUFA. GUERNSEY PARTRIDGE.

P. pedibus calcaratis rostroque sanguineis, gula alba cincta fascia nigra albo punctata. Lath.

The bill is brown; the irides are red; the upper part of the head is red brown, greyish on the forehead; the chin and throat are white, encircled with black; over each eye is a band of white; the forepart and sides of the neck cinereous, spotted with black; the back, wings, and rump are grey-brown; the breast is of a pale ash colour; the belly is rufous; the sides are marked with lunular streaks of black, white, and orange; the tail is composed of 16 feathers, of a rufous colour, except the middle ones, which are more or less grey brown; the legs are red. (*Montagu.*)

GENUS XXXV.

OTIS.

Bill strong, and a little hooked, no back-toe.

1. TARDA. GREAT BUSTARD.

*O nigro rufoque undulato-maculata subtus albida,
capite (maris) juguloque utrinque cristato. Lath,*

The bill is strong and convex, of a brownish colour; the irides are orange-red; on each side of the lower mandible is a tuft of long feathers; the head and neck are ash colour; the back and tail are barred with black and brown; beneath white; the legs are long, and naked above the knees; the bottom of the foot is furnished with a callous prominence, which serves instead of a heel.

The weight is 25lb. length 4 feet.

The female is much less, and wants the long feathers from the lower mandible.

The great bustard was formerly found on the downs of Wiltshire, but is now very rare.

It feeds upon grain, worms, or the bark of trees.

The female makes no nest, but deposits her eggs in a hole, which she forms in the ground; they are of a pale olive colour, with dark spots.

A singular reservoir was discovered in the male bustard by Dr. Douglas; it is in the form of a sac or pouch, and is situated on the fore-part of the neck, and capable of containing two quarts of water; the entrance to it is immediately under the tongue.

2. TETRAX. LITTLE BUSTARD.

O. nigro rufo alboque variegata subtus alba, capite juguloque lævi. Lath.

The bill is pale brown; irides pale crimson; the head is black, spotted with rust colour; the sides of the head, chin and throat are reddish white, marked with dark spots; the neck is black, encircled with a white band; the back and wings are rust colour; the under parts of the body, and outer edges of the wings are white; the tail of 18 feathers.

The female is smaller, wanting the black on the neck.

She lays 3 or 4 glossy green eggs; the young follow her as chickens do the hen.

DIVISION SECOND.

WATER BIRDS.

ORDER VI. GRALLÆ.

Beak various ; feet four toed, moderate or long, strong or slender ; the thighs more or less naked above the knee ; tarsi rounded, naked and reticulated ; toes cleft, or connected at the base by a membrane ; the hinder one either elevated from the ground ; the tip alone, or the whole resting thereon. (*Shaw.*)

Stomach intermediate, the secretion of the crop digesting, in part, the food contained therein.

GENUS XXXVI.

PLATALEA.

Bill long, broad, flat and thin ; the end widening into a roundish form, not unlike a spoon ; nostrils small, placed near the base ; tongue small and pointed ; feet semipalmated.

1. LEUCORODIA. SPOON-BILL.

Pl. corpore albo, gula nigra, occipite subcristato.
Lath.

The bill is yellow, six inches and a half long, broad and thick at the base, and flattened out at the extremity, and crossed by ridges of black and brown; the inside tuberculated; the cere is black; the irides are red; the crest long; the plumage is white; the feet, legs, and bare thighs are dirty black.

In the young the irides are grey.

The trachia is doubly reflected in the thorax. A specimen was shot on Sedgemoor, Somersetshire, 1813.—*Mont. in Lin. Trans.* vol. xii. p. 20.

They build on trees; the female lays 3 or 4 white eggs, marked with a few pale red spots.

GENUS XXXVII

ARDEA.

Bill straight, long, acute; toes connected by a membrane as far as the first joint; in some the middle claw is pectinated.

1. GRUS.

G. CINEREA, SHAW. } COMMON CRANE.

A. occipite nudo papilloso, pileo remigibusque nigris, corpore cinereo, tectricibus intimis laceris. Lath.

The bill is greenish black; the irides red brown; the crown black; the skin red; a bare place behind the head; the sides of the head, behind the eyes, and hinder part of the neck are white; between the bill, eyes, cheeks, and fore-part of the neck are blackish ash colour; the greater wing-coverts blackish; the bastard wings and quills quite black; the rest of the plumage is bright ash colour; the tail feathers resembling the plumes of the ostrich; the legs and thighs are black.

Length 5 feet.

The female lays 2 greyish green eggs, spotted with brown.

The trachia enters the keel of the sternum, and is doubly reflected. In the female the doubling is not so considerable.

2. NIGRA. BLACK STORK.

A. nigra orbitis nudis, pectore abdomineque albo. Lath.

The bill is 7 inches long, dusky red, orange at the tip; irides light hazel; lore and orbits red; the

legs and toes dull orange ; the head and back of the neck dusky black, glossed with green ; the remaining plumage dark shining green.

Shot in West Sedgemoor, Somersetshire, 13th May, 1814. (*Montagu in Lin. Transac.* vol. xii. p. 19.)

The spine in birds is immoveable, but the neck flexible, and its length depends upon the number of the vertebræ, varying in almost every species.

3. CICONIA.

C. ALBA, SHAW. }

WHITE STORK.

A. alba, orbitis nudis remigibusque nigris, rostro pedibus cuteque sanguineis, Lath.

The bill is about 7 inches long and red ; the legs and thighs are also red ; the plumage bright white except the quills, greater coverts, and some of the scapulars, which are black ; irides dark ; the orbits, base of feathers dusky reddish ; the feathers of the breast are long and pendulous.

The stork is migratory, observing the time of its departure from Europe with great exactness. It feeds upon serpents and lizards, &c. and is highly esteemed for its usefulness in clearing away vermin *in many countries*. In Holland it breeds upon the houses in boxes placed there by the inhabitants.

The female lays from 2 to 4 white eggs.

4. MAJOR. } HERON, HERONSEWGH,
 A. CINEREA, SHAW. } OR HERONSHAW.

*A. occipite crista nigra dependente, corpore cinereo,
 collo subtus linea fasciaque pectorali nigris.*
 (mas) Lath.

The bill is 6 inches long, of a yellow horn colour above, and yellow below; the edges serrated; a greenish naked skin extends from the beak beyond the eyes; the irides are yellow; the crown is white, (in winter) bordered with black lines; on the nape of the neck is a pendent crest; the fore-part of the neck is beautifully mottled by a double row of black feathers, those which fall over the breast are long and loose; the general plumage is lead or ash colour; the bastard wings and quills are of a bluish-black; the eggs are dirty green; the middle claw is jagged.

The female has no crest, and the feathers on the breast are short.

In the spring herons congregate, and build in the highest trees.

The nest is made of sticks, and lined with a few rushes, wool or feathers.

The female lays 4 or 5 eggs, of a pale green colour.

This bird feeds upon fish, and is a formidable enemy to such as wish to preserve them: we have taken out of the stomach of one five eels, each a foot long.

5. ALBA.
A. EGRETТА, SHAW. } GREAT WHITE HERON.

A. capite lævi, corpore albo, rostro fulvo, pedibus nigris. Lath.

The bill is bright yellow; the naked space about the eyes green; the irides are bright yellow; the whole plumage is snowy white; the feathers of the back are elongated; the legs are dusky green.—migrates.

The female lays from 4 to 6 green eggs.

6. ÆQUINOCTIALIS. LITTLE WHITE HERON.

A. capite lævi, corpore albo, remigibus duabus primis margine exteriori fuscis. Lath.

The bill is orange yellow; lore the same; irides pale yellow; the whole plumage is snowy white, except the crown of the head and neck, which is buff; the legs are black-green.

Length 20 inches.

7. NYCTICORAX.
N. EUROPÆUS, SHAW. } NIGHT HERON.

A. crista occipitis tripenni alba horizontali, dorso nigro, abdomine flavescente. Lath.

The bill is black, at the base yellow; the lore

greenish; irides yellow; a white line passes over each eye; the crown of the head, and nape of the neck are black, glossed with green; three long narrow white feathers hang pendant; the hinder-part, wings, sides and tail are ash coloured; the throat is white; the breast and belly are yellowish buff; the back is black; the legs are yellowish green; the middle claw serrated.

The female has not the plumes.

This species builds in trees.

The female lays 3 or 4 greenish-blue eggs.

8. CASPICA. AFRICAN HERON.

*A cristata corpore cinereo, collo pectore abdomine-
que ferrugineis, gula alba, collo lineis tribus
nigris. Lath.*

The bill is dusky yellow, blackish at the point, and seven inches long; the head and neck are pale ferruginous; the chin and throat are white; the feathers on the top of the head are long, black, and form a sort of crest; from the head a list of black runs down the back of the neck for two-thirds of its length; from the eye on each side another list continues down to the breast; on the lower part of the neck the feathers are long, loose, and of a deep ash colour; the breast is ferruginous chesnut; the back is very deep ash colour; the quills and tail are black; the lower feathers on the rump like those on the fore-

part of the neck, but mixed with ferruginous; the belly is pale ferruginous ash colour; the legs are dull yellow; the fore-part of them, the toes and claws are black.

The length is 3 feet.

9. STELLARIS.

BOTAURUS

STELLARIS, SHAW.

} BITTERN, BOG-BUMPER,
OR BUMBLE.

A. capite læviusculo, supra testacea maculis transversis, subtus pallidior maculis oblongis fuscis.

Lath.

The beak strong and pointed; the upper mandible is brown, the under one greenish; the irides are yellow; the crown is depressed, and covered with long feathers; the throat is yellowish white; the sides of the neck pale rust colour, variegated with black and white; the neck feathers are long and loose, which it can raise or depress at pleasure; the plumage on the back and wings is marked with zigzag lines, bars and streaks, upon a ground shaded with rust colour and yellow; the bastard wings, greater coverts and quills are brown, barred with black; the thighs, belly and vent are of a dull pale yellow, coloured with dingy brown; the tail consists of ten feathers, and is short; the legs are pale green, bare a little above the knees; the claws are sharp, the middle ones serrated.

The female is darker, and the feathers on the head, breast and neck are shorter.

She makes her nest of coarse stalks and herbage, and lays 4 to 6 greenish white eggs.

The bittern is a shy solitary bird, and commonly remains during the day hid amongst reeds and rushes.

During the breeding season the males make a loud bellowing noise, which has been compared to that of a bull.

It feeds upon frogs, lizards and fish.

10. MINUTA. LITTLE BITTERN.

A. capite lævi, vertice dorso remigibus rectricibusque nigro-virescentibus, collo tectricibus alarum abdomineque pallide fulvis. Lath.

The bill is green yellow; irides yellow; the head, back, quills and tail are greenish black; the forepart of the neck, breast and thighs are buff; the belly is white; the thighs are feathered to the knees.

The length is about 15 inches.

The female lays 5 or 6 white eggs.

GARZETTA. EGRET.

A. occipite cristato, corpore albo, rostro nigro, loris pedibusque virescentibus. Lath.

The bill is black; irides are yellow; the skin around

the eyes is greenish ; plumage most beautiful snowy white, with plumes on the head, breast, and shoulders ; the legs are black.

The female lays 4 or 5 white eggs.

12. GARDENI.

A. nigricans albo maculata subtus albida fusco striata, remigibus margine apiceque albis, cauda fusca. Lath.

The bill is dusky, beneath greenish yellow ; the lore is greenish ; the plumage is dusky above, spotted and striated with white, except the lower part of the back, which is plain ; the head, neck, breast and belly are whitish, streaked longitudinally with fine short lines of black and dusky ; lesser coverts are marked with yellowish spots ; the greater coverts, with a white spot at the tip of each feather, forming rows across the wings ; the greater quills are edged with dull white, the tips the same ; the tail is dusky ; the legs are of a dirty yellow.

Killed by Lord Kirkwall near Thame in Oxfordshire.

13. LENTIGINOSA.

BOTAURUS LENTIGINOSUS, SHAW.

A. subcristatus variegatus, supra fusco-purpureus, subtus pallide rufo-purpureus, collo antice dilute flavo maculis longitudinalibus spadiceis notate, gulâ albâ, vertice fusco. Shaw.

The head is small ; the crown is chocolate brown, shaded to a dull yellow at the nape, where the feathers are elongated ; the throat is white, with a row of brown feathers down the middle ; the back and scapulars are chocolate brown ; the legs are greenish,

The length is 22 inches.

Shot at Middleton in Dorsetshire, in autumn 1804, by Mr. Cunningham.

14. COMATA. SGUACCO HERON.

A. cristata luteo-rufescens, uropygio corpore subtus alis caudaque albis. Lath.

The bill is livid red, with a brown tip ; the lore is greenish ; the irides are yellow ; the crown is much crested ; the back is ferruginous, inclining to violet ; the wings, rump, tail, belly and vent are white ; the legs are greenish yellow ; the claw of the middle toe serrated. (*Lin. Transac. vol. 3. p. 335.*)

GENUS XXXVIII.

TANTALUS.

Bill long, incurved, thick at the base; face, and sometimes the whole neck bare of feathers; nostrils linear; tongue short; toes connected at the base by a membrane.

1. IGNEUS.

VIRIDIS, Syn.

FALCINELLUS, } GLOSSY IBIS.

T. corpore nigricante cæruleo viridi et vinaceo variegato-nitente, capite colloque nigris pennis al-bido fimbriatis. Lath.

The bill is about 5 inches long, smooth, roundish, much bent, of a green colour; fading to olive when dead; the eyelids are brown; the irides olive; the eyes are placed in a white space; under the chin it has a small dilatable pouch; the head and neck are black, the feathers fringed with white; the rest of the body is variegated with blackish blue-green and vinaceous; and in general very glossy; the quills are green gold, and when closed reach to the end of the tail; the wing-coverts next the body are reddish, mixed with blue; the next series are black, red and green; the last and quills are green gold; the tail the same, glossed in different lights, with red and

violet; the legs are very long, of a bright green; the claws are crooked and black.

The length is 2 feet.

GENUS XXXIX.

NUMENIUS.

Bill very long, slender, arched and obtuse.

1. ARQUATA. CURLEW.

N. cinerascens nigroque varius, pedibus cærulescentibus, alis nigris maculis niveis. Lath.

The bill is six inches long; the upper mandible is black, the under one flesh colour; the head, neck, and wing-coverts are streaked with dark and light brown; the feathers of the back and scapulars are nearly black, in the middle edged with pale rust colour; the breast, belly, and lower part of the back are dull white, varied with black; the quill feathers are black, crossed with white; the tail is barred with black, or a reddish ground; the thighs are bare about half way above the knees, which together with the legs are black.

The female makes her nest on the boggy moors

of dry rushes or grass, and lays 4 eggs of a greenish colour, spotted with brown.

As winter approaches they assemble in great numbers, and frequent the sea-side, where they feed upon marine insects.

2. PHÆOPUS. WHIMBREL.

N. rostro nigro, pedibus cærulescentibus, maculis dorsalibus fuscis rhomboidalibus, uropygio albo.
Lath.

The whimbrel much resembles the curlew, but is only half its size.

The bill is three inches long, the upper mandible is black, the lower one pale red.

The upper part of the head is divided lengthways by a white line, bounded on each side by a black one; the sides of the head, neck and breast are of a pale brown, marked with narrow dark streaks, pointing downwards; the belly is of the same colour, but the dark streaks upon it are larger; the vent and lower part of the back are white; the rump and tail-feathers are barred with black and white; the shafts of the quills are white; the outer webs totally black, but the inner ones marked with large white spots, the secondaries spotted in the same manner on both the inner and outer webs; the legs and feet are black.

GENUS XL.

SCOLOPAX.

Bill long, straight and slender; nostrils linear, lodged in a furrow; tongue slender, pointed, toes divided to their origin, or slightly connected; back-toe small.

1. RUSTICOLA. WOOD-CK. COCK.

Sc. castaneo nigro griseoque varia, subtus rufescens fasciolis nigris, fascia capitis nigra, femoribus tectis. Lath.

The head is of a triangular shape, with the eyes placed near the top; the bill is three inches long, furrowed, and ending in a knob; irides dark hazel; the crown of the head is of an ash colour; the nape and back part of the neck are black, marked with three bars of rusty red; a black line extends from the corners of the mouth to the eyes, the orbits are pale buff; the upper parts are most beautifully marbled, and variegated with red-brown, black and grey; the under parts are yellowish white, numerously barred with dark waved lines; the tail consists of twelve feathers; the legs are short, feathered to the knees, bluish or flesh coloured.

Length 14 inches, weight 12oz.

The wood-cock inhabits the northern countries during summer, and migrate to Britain in flocks in October and November.

The time of their arrival is said to depend much upon the prevailing winds, and it is observed that they seldom arrive before sunset; they return again northward in February or March, always pairing before they set out. A few have been bred in England.

They build their nests at the root of a tree.

The female lays 4 or 5 eggs, of a rusty colour, marked with brown spots.

2. MAJOR. GREAT SNIPE.

*Sc. nigro maculata supra testacea subtus albida,
linea verticis testacea, altera utrinque nigra.*
Lath.

The crown of the head is black, divided down the middle by a pale stripe; the neck and breast are yellowish white, with semicircular black lines; the back is testaceous; the sides are waved with black; the tail is rust colour; the legs are black.

Weight 8oz. length 16 inches.

This is a rare species; we have seen one specimen killed in Orkney, December, 1819.

3. GRISEA. BROWN SNIPE.

Sc. cinereo-fusca nigro nebulosa, alis fuscis, dorso abdomine caudaque albis, uropygio rectricibusque nigro fasciatis. Lath.

The bill is two and a half inches long, and not so slender as that of the common snipe; it spreads a little broad, and is compressed at the end; it is of a dusky colour, lightest at the base; the upper mandible is serrated within along the middle of the roof; the irides are dusky; the plumage a mixture of white, grey and brown; the legs are yellow olivaceous green.

The length is 11 inches.

4. GALLINAGO. COMMON SNIPE.

Sc. rostro tuberculato, corpore nigricante et fulvo vario subtus albo, frontis lineis fuscis quaternis. Lath.

The bill is three inches long, and smooth, but dimpled when it is dead; the head is divided lengthways by five lines, two of which are black, and three of a reddish white; a dark mark extends from the corners of the mouth to the eye; the chin and fore-part of the neck are yellowish white; the latter spotted with brown; the scapulars are striped lengthways on one web, and barred on the other with black and yellow; the quills are dusky; the edge of the primaries and tips of

the secondaries are white; those nearest the back are barred with black and pale red; the breast and belly are white; the tail-coverts are reddish brown; the tail is dusky, barred with black, and tipped with yellow or white; the legs are pale green.

Weight 4oz. length 12 inches.

The snipe migrates in the spring; some few breed with us.

The female lays 4 or 5 greenish eggs, spotted with rusty, in a nest formed of withered grass, and a few feathers.

5. GALLINULA. JACK SNIPE, OR JUD-CK. COMMON

Sc. rostro tuberculato, corpore variegato, uropygio violaceo vario, pedibus virescentibus, loris fuscis.

Lath.

The jack snipe weighs only 2oz. length $8\frac{1}{2}$ inches; the bill is $1\frac{1}{2}$ inches long; the crown is black, a yellow streak passes over each eye; the neck is white, spotted with brown and pale red; the scapulars are bordered with yellow, and the inner webs are of a shining bronze, with purple and green reflections; the quills are dusky; the rump is of a glossy violet or bluish purple; the belly and vent are white; the tail of 12 feathers, dark brown, edged with rust colour; the legs are dull green.

This species much resembles the snipe; the eggs are smaller.

6. TOTANUS. SPOTTED SNIPE.

*Sc. nigricans maculis albis subtus alba, pectore lineolis
rectricibus lateralibus fasciis nigricantibus, pedi-
bus rubris. Lath.*

The bill is $2\frac{1}{2}$ inches long, base red, and black at the tip; irides hazel; the head, neck, breast, and belly are spotted in streaks, and mottled and barred with dingy ash-brown and white; the throat and back are white and spotted; the legs are of a deep orange red.

7. ÆGOCEPHALA. COMMON GODWIT, GOD-
WYN, YARWHELP, OR YARWIP.

*Sc. rostro flavo-rubente, pedibus virescentibus, capite
colloque rufescentibus, remigibus tribus nigris basi
albis. Lath.*

The bill is about 4 inches long, purplish at the base, and black at the tip; a whitish streak passes from the bill over each eye; the head, neck, back, scapulars and coverts are of a pale reddish brown, each feather being marked down the middle with a dark spot; the fore-part of the breast is pale, streaked with black; the belly, vent and tail are white, the latter irregularly barred with black; the webs of the

first 6 quill-feathers are black, edged on the interior sides with reddish brown; the legs are greenish blue.

8. LAPPONICA. }
LIMOSA, Syn. } RED-BREASTED GODWIT.

Sc. rostro flavescente, pedibus nigris, subtus tota rufoferruginea. Lath.

The bill is a little curved upwards, of a yellowish colour, red at the base; the whole plumage is red-brown, spotted with black; the wings and tail are black and white; the legs are black.

9. CANESCENS. CINEREOUS GODWIT.

Sc. cinereo alboque varia, gula pectoreque albis, cauda fasciis pectoreque maculis cinereis. Lath.

The bill is two inches and a half long; the head, neck and back are variegated with ash colour and white; the tail is slightly barred with ash colour; the throat and breast are white; the last spotted with ash colour; the legs are long, slender and ash coloured.

10. GLOTTIS.

CANTABRIGI-
ENSIS, Syn.} GREENSHANK, OR GREEN-
LEGGED HORSEMAN, CAM-
BRIDGE GODWIT.

Sc. grisea-fusca maculis nigricantibus varia, superciliis dorso infimo corporeque subtus albis, rectricibus albis fasciis fuscis. Lath.

The bill is $2\frac{1}{2}$ inches long; the upper mandible is black, the under one reddish at the base; the upper parts are palish brown ash colour; the under parts and rump are pure white; a white streak passes over each eye; the quill-feathers are dusky; the tail is white, crossed with dark bars; the legs are dark green, the outer toe connected by a membrane to the middle one as far as the first joint.

11. CALIDRIS. RED-SHANK, RED-LEGGED
HORSEMAN.

Sc. rostro rubro, pedibus coccineis, corpore cinereo, remigibus secundariis albis. Lath.

The bill is one inch and one-third long, red at the base, and black at the tip; irides hazel; the head, back of the neck and scapulars are dusky ash colour, spotted with black; the back and under side of the body are white, spotted with black; the tail is barred with black and white; the legs are orange.

Length 12 inches, weight $5\frac{1}{2}$ oz.

The female lays 4 whitish eggs, tinged with olive and marked with black.

GENUS XLI.

TRINGA.

Bill roundish, straight, about the length of the head; nostrils narrow, toes four.

1. PUGNAX.

GAMBETTA, Syn.

EQUESTRIS.

FLAVIPES.

GRENOVICENSIS.

MALE RUFF.

FEMALE REEVE.

Tr. rostro pedibusque rufis, rectricibus tribus lateralibus immaculatis, facie papillis granulatis carneis. Lath.

Male. The bill is in some yellow, in others black or dark brown; irides hazel; the face is covered with pyriform tubercles of a yellow colour, which become red in the breeding season; the back part of the head and neck are furnished with long feathers, which expand in a singular manner on each side of the neck, and hang loosely over the breast like an

ancient ruff. It has also a tuft of feathers projecting beyond each eye, and presenting the appearance of long ears.

The male does not acquire the ruff until the 2nd. season, and loses it after the time of incubation.

This bird is remarkable different in its plumage, no two being marked exactly alike; hence has arisen the many supposed species which have been described from it in different feathers. The plumage is generally brown from the lightest tint to the deepest chocolate colour; sometimes the ruff is of a fine tender buff colour, without spots; others have it deep brown, white or spotted, in endless variety.

Female. The females have no ruff, and are generally of a pale brown colour, the back spotted with black, the breast and belly white; legs of a pale yellow.

The ruff arrives in spring in Lincolnshire, and in the East-riding of Yorkshire.

The female in the beginning of May make her nest in a tuft of grass in the fens, and lays 4 white eggs, marked with rusty spots.

2. VANELLUS.

VANELLUS

GAVIA. LEACH.

} LAP-WING, PEE-WIT, OR
TEWIT.*Tr. pedibus rubris, crista dependente, pectore nigro.*

Lath.

The bill is black; irides large, light hazel; the head is black, glossed with green; a crest of black feathers rises from the back part of the head; the sides of the head and neck are white; the throat is black; the back and wing-coverts are dark green, glossed with purple and blue reflections; the breast and belly are snowy white; the upper tail-coverts and vent are pale chesnut; the tail is white, tipped with black; the legs are red.

Var. brownish.

The female lays two eggs on a little dry grass; they are olive coloured, spotted with black. The young are able to run within a day or two after they are hatched.

The chief food of lap-wings are worms, which they obtain by striking the ground near a worm-cast, when the reptile issues forth, and is seized; in the evening they also take them readily when the dew is upon the ground, and the worms begin to creep about.

3. SQUATAROLA. }
 HELVETICA, Syn. } GREY SAND-PIPER.

*Tr. rostro nigro, pedibus virescentibus, corpore griseo
 subtus albido.* Lath.

The bill is one inch and a quarter long; irides dusky; the upper part of the head neck, back, scapulars and wing-coverts are dusky; the cheeks and throat are white, with a few dusky lines; the belly and tail-coverts are white; the quill-feathers are black; the inner webs more or less white, as well as the shafts; the tail is white, barred with black; the legs are dusky, the back-toe extremely small, the claw almost adhering to the leg. (*Montagu.*)

Var. forehead, throat and rump white.

Weight 7oz. length 12 inches.

4. OCHROPUS. }
 GLAREOLA. } GREEN SAND-PIPER.

Martwick in Lin. Trans. vol. 1. 2.

*Tr. rostri apice punctato, pedibus virescentibus dorso
 fusco-viridi, abdomine rectricibusque extimis al-
 bis.* Lath.

The bill is one and a half inch long; the head is of a brown ash colour; above green, with white spots; the belly, rump and tail are white, with a

few black spots; the bill and legs are greenish lead colour.

The length is 8 or 10 inches.

5. HYPOLEUCOS. COMMON SAND-PIPER.

*Tr. rostro lævi, pedibus cinereis, corpore cinereo sub-
tus albo.* Lath.

The bill is black, brown at the base, and one inch long; the head and quills are brown; the neck is ash colour; the back is brown, mixed with green, with transverse dusky lines; longitudinal black lines on the head; it has a white stroke above each eye; beneath white; the legs are dull green, faintly blushed with red.

Weight 2oz.

The female lays 5 yellowish eggs, mottled with dark spots.

6. MACULARIA. SPOTTED SAND-PIPER.

*Tr. rostro basi pedibusque incarnatis, corpore undi-
que maculato, superciliis fasciaque gemina alarum
albis* Lath.

The bill is black, at the base red; above each eye there is a white streak; the upper plumage is glossy light brown, with green reflections, and spotted with black; the rump is plain; the greater quills are dusky;

the secondaries are tipped with white; the two middle tail-feathers are greenish brown; the side ones are white, crossed with dusky lines; the breast, belly and vent are white, in the female spotted with brown; the legs are pale dull red colour.

Weight 5oz. length 10 inches.

Migrates.

7. ISLANDICA.

CALIDRIS, Syn.

CINEREA,

CANUTUS,

ABERDEENVENSIS.

RED SAND-PIPER.

Tr. rostro pedibusque fuscis, corpore subtus ferrugineo, remigibus secundariis margine albis. Lath.

The bill is one inch and a half long; the head, neck, and beginning of the back are dusky, marked with red; the fore-part of the neck and breast are cinereous, mixed with rust colour, and obscurely spotted with black; the lesser wing-coverts are cinereous; the quills are dusky; the secondaries are tipped with white; the two middle tail-feathers are dusky, the others are cinereous; the legs are long and black.

A specimen of this species was shot 20th August, 1813, at Sanda, Orkney. (*Bullock in Lin. Trans. vol. 11. p. 176.*)

8. FUSCA. BROWN SAND-PIPER.

Tr. pallide fusca nigro maculata subtus alba, collo antice nigro striato, cauda cinerea, tectricibus alarum albido marginatis. Lath.

About the size of a jud-cock; the bill is black; the head, upper parts of the neck, and back are of a pale brown, spotted with black; the coverts of the wings are dusky, edged with white; the under side of the neck is white, streaked with black; the belly is white; the tail cinereous; the legs are black. (*Pennant.*)

9. LINCOLNIENSIS. BLACK SAND-PIPER.

Tr. alba, supra maculis griseis fuscisque varia, subtus maculis oblongis fuscis et nigris, rectricibus duabus intermediis toto nigris. Lath.

The size of a thrush. The nostrils are black; the irides yellow; the beak is short, blunt at the point, and dusky; the head is small, and flattened at the top; the colour is white, most elegantly spotted with grey; the neck, shoulders and back are mottled in the same manner, but darker, being tinged with brown; in some lights these parts appear of a perfect black, and glossy; the wings are long; the quill-feathers are black, crossed near their base with a

white line; the throat, breast, and belly are white, with faint brown and black spots, of a longish form, irregularly dispersed; the tail is sharp and white, except the two middle feathers, which are black; the legs are long and slender, and of a reddish brown colour. (*Pennant.*)

10. MARITIMA.
 NIGRICANS, Syn. } PURPLE SAND-PIPER.
 STRIATA of Gmelin.

Tr. griseo nigroque varia subtus alba, jugulo caudaque obscuris, rectricibus lateralibus quatuor albo marginatis Lath.

The bill is slender, one inch and a quarter long, tapering towards the point, a very little curved, and of a dull red colour, except at the apex and sides, which are dusky; irides hazel; the head and neck are dusky black; the eye-lids whitish; the throat is white; the back and scapulars are black, glossed with purple, and edged with ash colour; the wing-coverts are ash, tipped with white; the large ones above the pinions are doubly so; the quills are black, slightly edged with white on the exterior webs, except three of the secondaries, which are almost wholly white; these, with the white tipped coverts, form a slight oblique bar on the wing, when extended; the shafts are white; the breast and all beneath white, prettily spotted with black, except the middle of the

belly and vent ; the rump, coverts of the tail, and four middle tail-feathers are black, glossed like the back ; the other tail-feathers are light cinereous ; in all 12. The legs and toes are dull red, the claws are black and blunt ; the toes nearly divided to their origin, middle toe thick and long. (*Montagu, 4th vol. Lin. Trans.*)

11. PUSILLA. LITTLE SAND-PIPER, OR STINT.

Tr. rostro pedibusque fuscis, corpore subtus rufescente, rectricibus extimis scapo albo, uropygio variegato. Lath.

The bill is black ; the crown of the head black feathers edged with rust colour ; the throat, fore-part of the neck and belly are white ; the breast is tinged with reddish yellow ; the shoulders and scapulars are black, edged with white on the exterior webs of each feather ; the back and tail are dusky ; the legs are slender, black, and above six inches long.

12. BEWICKII, RED-LEGGED
ERYTHROPUS, BEWK. SAND-PIPER.

The length is ten inches ; the bill is an inch and three eighths long, black at the tip, and reddish towards the base ; the crown of the head is spotted with dark brown, disposed in streaks, and edged with pale

brown and grey; a darkish patch covers the space between the corners of the mouth and eyes; the chin is white; the brow and cheeks are pale brown, prettily freckled with small dark spots; the hinder part of the neck is composed of a mixture of pale brown, grey and ash colour, with a few indistinct dusky spots; the fore-part and the breast are white, clouded with dull cinnamon colour, and marked with black spots, reflecting a purple gloss; the shoulder and scapular feathers are black, edged with pale rust colour; the tertials are nearly the same length as the quills; the tail-coverts are glossy black, edged with rust colour, and tipped with white; the tail-feathers are lightish brown, except the two middle ones, which are barred with spots of a darker hue; the belly and breast are white; the legs are bare above the knees, and as red as sealing wax; the claws are black.

The eggs are greenish white, spotted and blotched with brown. (*Montagu.*)

13. INTERPRES.

MORINELLA, Syn.

STRIPSILAS

INTERPRES, LEACH.

} TURNSTONE.

Tr. pedibus rubris, corpore nigro albo ferrugineoque vario, pectore abdomineque albo. Lath.

The bill is strong and black, one inch long; irides

black; the fore-head and throat are ash colour; the neck and back are brown; the rump is white, with a triangular black spot; the tail is black and white; the legs and feet are red.

In order to procure beetles and marine insects on which it feeds, it turns up the stones under which they are found with its bill.

The female lays 4 olive eggs, spotted with black.

14. ALPINA.
CINCLUS, Syn. } DUNLIN.

Tr. testaceo-fusca, pectore nigricante, rectricibus cinereo-albidis, pedibus fuscescentibus Lath.

The bill, legs and feet are black; above ferruginous, or rusty red; the middle of each feather black; the quills and greater coverts are dark brown, the latter deeply tipped with white; the belly and vent are white; the middle tail-feathers are black, edged with white.

The nest is formed of dried tufts of the *juncus squarrosus*.

The female lays 4 smoky eggs, irregularly marked with light and darker brown blotches. (*Lin. Trans.* vol. 8. and 12. p, 534.

15. PIGMÆUS. PIGMY SAND-PIPER.

The bill is one inch and a half long, bent and

black; the head, back, and wing-coverts are mixed with brown, ferruginous and white; the primories are dusky, edged with white; the breast, belly, and rump are white; the tail is dusky, the exterior feathers are edged with white; the legs are black. (*Latham.*)

The weight is 2oz. the length $8\frac{1}{2}$ inches.

The pigmy sand-piper is rather superior in size to the purre, to which it has a near affinity; but differs from it, its legs being long and slender, and bill slender; the thighs bare of feathers, half an inch above the knees. (*Montagu.*)

GENUS XLII.

CHARADRIUS.

Bill straight, roundish, obtuse; nostrils narrow; toes three.

1. PLUVIALIS. GOLDEN PLOVER.

Ch. corpore nigro viridique maculato subtus albido, pedibus cinereis. Lath.

The bill is dusky; irides dark; the upper parts are spotted with golden-yellow, on a dark brown ground; the neck and breast are the same, but paler;

the belly is almost white; the quills are dusky; the tail is marked with dusky and yellow bars; the legs are black.

The golden plover varies much in plumage; the neck and breast are black in the breeding season.

The female lays 4 pale olive-coloured eggs, spotted with black.

2. MORINELLUS. DOTTEREL.

Ch. pectore ferrugineo, fascia superciliarum pectorisque lineari alba, pedibus nigris. Lath.

The bill is black; irides dark; the head, shafts of the quills, belly, and tip of the tail are black; a broad white line crosses above each eye; the cheeks, throat, and thighs are white; the breast and sides are orange the rest is olive; the legs are dark olive.

Weight 4oz.—migrates.

3. HIATICULA. ALEXANDRINUS, Syn. } RINGED PLOVER.

Ch. griseo-fuscus subtus albus, pectore nigro, fronte nigricante fasciola alba, vertice fusco, pedibus luteis, Lath.

The bill is orange, tipped with black; irides hazel; the forehead and belly are white; a black gorget on

the neck ; the crown, back, and tail are brown ; the legs yellow, or orange.

Weight 2oz. length $7\frac{1}{2}$ inches.

The female lays 4 pale ash coloured eggs, spotted with brown : she makes no nest, but deposits them on the ground. (*Lin. Trans. vol. 7. 281.*)

4. CALIDRIS.

RUBIDUS, Syn.

ARENARIA VULGARIS, SHAW.

} SANDER-
LING.

Ch. rostro pedibusque nigris, loris uropogioque subgriseis, corpore subtus albo immaculato. Lath.

The bill is slender, black, and grooved ; the brow of the eyes are white ; the head and back of the neck are pale ash colour, streaked with long black spots ; the back is brownish grey, beneath white ; tail of 12 ash coloured feathers ; eggs black.

Length 8 inches.

5. HIMANTOPUS. LONG-LEGGED PLOVER.

Ch. albus, dorso nigro, rostro nigro capite longiore, pedibus longissimis. Lath.

The bill is two inches and a half long, and black ; irides red ; the crown of the head, back and wings are glossy black ; the wings are long ; the tail is light

grey ; the fore-head, breast, belly, and two outer tail-feathers are white ; the legs are very long, slender, and scarlet.

6. CANTIANUS. KENTISH PLOVER.

Ch. fuscus fronte collari abdomineque albis, vittâ per oculos lateralibusque pectoris nigris. Shaw.

The bill is black ; the top of the head ferruginous-brown, bounded on the fore-part with black ; the forehead is white, which also passes over the eyes ; from the bill through the eye is a black streak ; the back and wings are pale brown ; quills dusky ; greater coverts are tipped with white ; a white collar round the neck ; beneath white, as are also the three outer tail-feathers.

Latham supposes it a var. of the winged plover.

The female lays 3 or 5 olive eggs, spotted with dusky brown.

7. ÆDICNEMUS. THICK-KNEED BUSTARD, STONE CURLEW,
 ÆDICNEMUS { OR COMMON THICK-
 CREPITANS, SHAW. { KNEE NORFOLK PLOVER.

Ch. griseo-fuscus, supra lineis longitudinalibus nigricantibus, remigibus primoribus duabus nigris medio albis. Shaw.

The bill is yellow at the base, with a black tip ;

irides and eye-lids are pale yellow; above each eye there is a pale streak, and beneath one of the same colour; the throat is white; plumage above is of a tawny brown; each feather has a dark streak down the middle, the breast is paler; the belly, thighs and vent are pale yellowish white; the quills are black; the tail is white, tipped with black; the legs are yellow, naked above the knees, which are thick; the claws are black.

Length 16 inches.

The Norfolk plover arrives in April, and frequents the stony heaths and downs in many of the southern counties.

It feeds upon worms and insects, and according to the observations of my friend A. H. Haworth, Esq. F.L.S. it prefers the *larvæ* of the *bombyx trifolius*, which secrete themselves by day under loose stones; which the bird ingeniously enough turns up to come at them. (See *Lepid. Brit.* p. 83.)

“It lays its eggs, usually two, never more than three, on the bare ground, without any nest, in the field; so that the countryman in stirring his fallows, often destroys them. The young run immediately from the egg like partridges, and are withdrawn to some flinty field by the dam, where they sculk among the stones, which is their best security; for their feathers are so exactly of the colour of our grey-spotted flints, that the most exact observer, unless he catches the eye of the young bird, may be eluded. The eggs are short and round; of a dirty white, spotted with dark bloody blotches.

During the evening you may hear them round the village, for they make a clamour which may be heard a mile."
(*White's History of Selborne.*)

In autumn they migrate in flocks, probably to Spain.

GENUS XLIII.

CUSORIUS.

Bill round, incurvated near the end and pointed; mouth large; nostrils ovate; tongue sharp; legs and feet formed for running; toes, three placed forwards; no back toe. (*Montagu.*)

1. EUROPÆUS.

CUSORIUS

ISSABELLINUS, SHAW.

} CREAM-COLOURED
PLOVER.

C. fuscescens, striga per oculos pallida, remigibus macula pone oculos et ad apicem rectricum lateraliū nigris. Lath.

The bill is black three-fourths of an inch long, slender and bent at the tip; the plumage in general of a cream colour, palest beneath; behind the eyes is a black patch, through which a pale streak passes back to the hinder part of the head dividing the black; the quills are black; tail is cream coloured,

marked with black near the tip; the legs are yellowish.

The length is 10 inches.

A specimen was shot in North Wales, 1793, Mr. Dickinson.

"We were in possession of a specimen of this bird, which unfortunately, had been so much injured by the shot, and so ill preserved, that it fell a prey to insects.* It was shot near Wetherby, in April 1816: it was seen alone, frequenting a piece of dry fallow ground, over which it ran with great swiftness, making frequent short flights, and was approached without difficulty. The haunts and habits of this bird, as described by Latham, exactly agree with the foregoing, and in no respect do they differ in plumage, except that in our specimen, the black patch behind the eyes was undivided by any pale streak, and the crown of the head was ash coloured.

We made a correct drawing of this bird when in its most perfect state." *W.*

GENUS XLIV.

HÆMATOPUS.

Bill compressed, obtuse; toes three, the middle connected to the exterior as far as the first joint.

* Many valuable specimens having been lost by a want of care in their curing, we have subjoined as an appendix a few directions for the preservation of birds.

1. OSTRALEGUS. PIED OYSTER CATCHER, OR
SEA PIE.

*H. niger, corpore subtus fascia gulari et alarum
uropygio caudaque basi albis.* Lath.

The bill is three inches long, bright orange; irides crimson; tongue very short; the head, neck, and shoulders are black; the wings and tail are black and white; beneath white; legs pale red.

Weight 16oz. length 17 inches.

The female deposits her eggs (which are generally grey, spotted with black,) on the sea-shore.

GENUS XLV.

RALLUS.

Bill slender, a little compressed, slightly incurvated; nostrils small; tongue rough at the end; body much compressed; tail very short.

1. AQUATICUS. WATER RAIL, BILCOCK, VELVET-
RUNNER, OR BROOK OUZEL.

*R. alis griseis fusco maculatis, hypochondriis albo
maculatis, rostro subtus fulvo.* Lath.

The bill is slightly curved, the upper mandible is

dusky, edged with red, the under is reddish orange; irides red; plumage above black; the feathers edged with olive brown, beneath ash colour; the wings are white; the tail short; legs dirty red.

The female lays yellowish eggs, spotted with dusky brown.*

GENUS XLVI.

GALLINULA.

Bill thick at the base, sloping towards the point and somewhat compressed sideways; forehead more bare; body compressed; wings short and concave; tail short; toes divided to their origin.

1. CREX. CRAKE GALLINULE, DAKER-HEN, OR LAND RAIL.

G. grisea pennis medio nigricantibus, alis rufo-rugineis, corpore subtus albo-rufescente. Lath.

The bill is light brown; irides hazel; the feathers

* In the 3rd number of the *Edinburg Philos. Journal*, p. 190, it is said that the winglets of the *rallus aquaticus* are provided with spines, about the eighth of an inch in length. Several passerine birds are also said to possess them.

on the upper parts of the plumage are dark brown, edged with rust colour; the wing-coverts and quills are of a deep chesnut; the forepart of the neck and breast are of a pale ash colour; a streak of the same colour extends over the eye; the belly is yellowish-white; the sides, thighs and vents are faintly marked with rusty coloured streaks; the legs are pale flesh colour.

The female lays 10 or 12 eggs, in a nest formed of moss or dry grass, they are of a pale ash colour, marked with rust coloured spots, the young are covered with a black down.

The Corn Crake appears in spring, and leaves us in autumn.

2. CHLOROPUS. COMMON GALLINULE, OR
FULICA, LIN. MOOR-HEN.

G. fronte fulva, armillis rubris, corpore nigricante, crisso albo. Lath.

The bill is greenish yellow at the tip and reddish at the base, and furnished with a callous protuberance on the forehead which is white except at the breeding season, when it becomes blood red; irides are red, the head is black, except a white spot under each eye; the upper parts of the plumage are of a dark olive green, inclining to brown; the under parts are deep lead colour; the vent is black, tipped with white; the margin of the wing is white; legs deep green or yellowish.

The female lays 6 or 7 white eggs, marked with rust coloured spots.

3. PORZANA. SPOTTED GALLINULE.

G. fusco-olivacea nigro albidoque variegata et maculata, subtus cinerea albido varia, rectricibus duabus intermediis albo marginatis. Lath.

The bill is greenish yellow, three-fourths of an inch long; the top of the head to the nape is dusky, slightly streaked with rusty brown; a brown and white mottled stripe passes from the bill over and behind the eyes; the cheeks and throat are of a freckled dull grey; the neck and breast are olive, marked with small white spots; the sides are dusky and olive, crossed with bars of white; the under parts are a mixture of cinereous dirty white and yellow; the colour of the plumage of the upper parts is dusky and olive-brown spotted, barred or streaked with white; legs yellowish green. (*Bewick.*)

Length 9 inches, weight 4½oz.

The female lays 6 or 8 white eggs.

4. MINUTA. LITTLE GALLINULE.

The bill is bright green; the upper parts of the head dusky brown; the chin and throat are white; the lower part of the neck, breast, sides, and

greater part of the body beneath, are plain fawn colour; the rump is plain olive brown; the legs are bright green.

Weight 2oz. length $7\frac{3}{4}$ inches.

A new species, shot near Ashburton, Devonshire, 1809. (*Montagu.*)

5. FOLJAMBEI. OLIVACEOUS GALLINULE.

The bill is green yellow, the base red; the irides and orbits are bright red; the forehead, breast and belly are cinereous; the back of the head, wings and rump are olive brown; the legs and toes are olive.

Length $7\frac{1}{2}$ inches, breadth $10\frac{1}{2}$ inches.

A new species taken in Norfolk, 1812. (*Mr. Foljambe.*)

ORDER VII. PINNATIPEDES.

Toes Scalloped.

The stomachs in this order, are intermediate, partly membranous, yet furnished with one strong muscle, which crosses them in the middle: the fluid in the crop appears also to act upon the substances contained therein; the crop and stomachs of some Grebes which we opened from Orkney, were full of

the young cole fish, (*gadus carbonarius*) partly digested.

GENUS XLVII.

PHALAROPUS.

Bill straight and slender; nostrils minute; toes furnished with scolloped membranes.

- | | |
|-----------------|------------------|
| 1. HYPERBOREUS. | } RED PHALAROPE. |
| FUSCUS, SYN. | |

P. (mas.) cinereus, subtus uropygio fasciaque alarum albis, pectore cinereo, colli lateribus ferrugineis.

P. (fem.) corpore griseo subtus rufo, uropygio fasciaque alarum alba, superciliis, rectricibusque basi rufescentibus. Lath.

The bill is about an inch long, black, slender and straight, but bent a little downwards at the tip; the crown is black red; the hinder part of the neck, breast and wing-coverts are of a lead colour; the back and scapulars are the same, but striped with yellowish rusty edges; wings long, tipped with white; legs black.

2. LOBATUS.
GLACIALIS, SYN. } GREY PHALAROPE.

Ph. cinereo-cærulescens subtus albus, tectricibus alarum remigibus rectricibusque nigricantibus margine cinerascete-albis. Lath.

The bill is dusky horn colour with a double groove, the under mandible is orange at the base; the eyes are placed high in the head; the head and under parts of the body are white, above grey or lead colour; the secondaries are tipped with white; the wings are long; the legs are black; toes scalloped and serrated.

GENUS XLVIII.

FULICA.

Bill short, thick, convex; forehead bare; toes furnished with scalloped membranes.

1. ATRA.
ATERRRIMA, SYN. } COOT.

F. fronte incarnata, armillis luteis, corpore nigricante. Lath.

The bill is greenish white or olive; a thick callous membrane covers its forehead, which changes with

the seasons, being red in the breeding season; the irides are red; the upper parts are black except a white spot near each eye; and a white streak on the outer edge of the wings; the under parts are ash colour; the legs and toes are yellowish green or lead colour, with a yellow garter.

Weight 28oz.

The female builds her nest amongst rushes; it is composed of dried weeds, lined with soft grass.

She lays from 12 to 15 pale brownish eggs, spotted with rust colour.

GENUS XLIX.

PODICEPS.

Bill strong, slender, sharp-pointed; nostrils linear; lore or skin between the bill and eyes bare; tongue slightly cloven; tail none.

1. CRISTATUS. CRESTED GREBE, CARGOOSE, OR ASH-COLOURED LOON.

P. fuscus subtus albus, capite rufo tumido, collari nigro, remigibus secundariis albis. Lath.

The bill is $2\frac{1}{4}$ inches long, red at the base, tip dark; lore red in the breeding season, afterwards

dusky; irides fine pale crimson; the males have a pendent ruff round the neck, and tufts of feathers like ears; the upper parts are mouse colour, beneath silvery white; the legs are dusky inside; the toes pale green.

Weight $2\frac{1}{2}$ lb. length 21 inches.

2. OBSCURUS. DUSKY GREBE.

P. fusco-nigricans subtus albus, macula utrinque inter rostrum et oculum, marginibus alarum remigibusque intermediis candidis. Lath.

The bill is pale blue, with reddish edges; the lore and orbits red; irides bright yellow; the upper part of the head, hinder part of the neck, scapulars and rump sooty black, or mouse colour; the back glossy; secondaries white; fore-part of the neck light brown; the breast and belly glossy white; the legs are white behind, pale blue on the inner side, and toes blue.

Var. mandibles yellow.

The female lays 4 white eggs.

3. AURITUS. EARED GREBE, OR DOB-CHICK.

P. fusco-nigricans subtus albus, capite nigro, auribus cristato-ferrugineis. Lath.

The bill is slender black, at the base reddish

brown; the lore and irides are red; the head is sooty black, with two large ears composed of orange-feathers; the neck and upper parts black; beneath glossy white; the sides rusty chesnut; the legs are greenish black.

Length about 12 inches.

The female lays 4 or 5 small white eggs.

4. RUBRICOLLIS. RED-NECKED GREBE.

P. subcristatus fuscus, gula genis regioneque aurium cinerascens, collo subtus pectoreque ferrugineo-rubris, abdomine remigibusque secundariis albis. Lath.

The bill is horn-colour, at the corners reddish yellow; the lore is dusky; the irides are dark hazel; the cheeks and throat are greyish white; the upper part of the head black, the feathers lengthened out; the fore-part of the neck is dingy brown, mixed with feathers of rusty red; the upper parts are mouse-colour; the shoulders grey; the inner sides of the feet sallow green; the webs of the outer toes are flesh-colour, the middle ones redder, and the inner orange.

5. MINOR.

HEBRIDICUS, Syn. } LITTLE GREBE, DOB-
CHICK, DOUCKER, OR
DIPPER.

*P. fulvo-fuscus, corpore subtus macula remigum
uropygioque infimo albo-argenteis, collo subtus
griseo-fulvo. Lath.*

The bill is dusky reddish ; the irides are hazel ; the head thickly cloathed with feathers, which it can puff up to a great size, or lay down at pleasure ; the cheeks are bright bay ; the neck, breast, and upper parts brown or chesnut colour, tinged with red ; the belly is silvery white ; the thighs and vent are grey ; the legs are dirty olive-green.

The length is about 10 inches, the weight 7oz.

The female lays from 4 to 6 yellowish white eggs.

6. CORNUTUS. SCLAVONIAN GREBE.

*P. cristatus, collo subtus pectoreque fulvis, capite
nigro tumido, per oculos fascia cirrhata flava.
Lath.*

The bill is long, at the tip horn-colour, at the base inclining to pink ; lore crimson ; the irides crimson ; round the pupil is a circle of white ; the head is black, at the top tinged with dark green ; the cheeks and throat are the same ; from the base of

the upper mandible originates a broad bar of dull orange-yellow; the back part of the neck and upper part of the back are dark brown, dashed with ferruginous; the back, scapulars and rump are dusky, faintly edged with cinereous; the wing-coverts are brown and white; the breast is bright ferruginous chesnut; the rest of the under parts are glossy satin white; the legs are dusky, pale on the inside. (*Montagu.*)

The length is $13\frac{1}{2}$ inches.

ORDER VIII. PALMIPEDES.

Toes webbed.

“Most people who have exercised any degree of observation, know that the swimming of birds is nothing more than walking in the water, where one foot succeeds the other as on land; but no one, as far as I am aware, has remarked, that diving fowls, while under water, impel and row themselves forward by a motion of their wings, as well as by the impulse of their feet; yet such is really the case, as any one may easily be convinced who will observe ducks when hunted by dogs in a clear pond. Nor do I know that any one has given a reason why the wings of diving fowls are placed so forward; doubtless not for the purpose of promoting their speed in flying, since that position certainly impedes it; but probably for the increase of their motion under water, by the use of four oars instead of two,

and were the wings and feet nearer together, as in land birds, they would, when in action, rather hinder than assist one another." (*Rev. Mr. White of Selborne.*)

A great proportion of the genera under this order are furnished with an intermediate stomach; the anseres with a powerful gizzard.

GENUS L.

RECURVIROSTRA.

Bill curved upwards, flexible at the apex, three toes webbed.

1. AVOCETTA. SCOOPING AVOSET,

R. albo nigroque varia. Lath.

The bill is black, about $3\frac{1}{2}$ inches long; the irides are hazel; above black and white, beneath white; the legs are very long, and of a fine pale blue colour; the thighs are naked.

The female lays 2 eggs, cinereous grey, spotted with deep brown and rusty.

It frequents rivers and lakes in winter, in the southern parts of England, and assembles in flocks in the breeding season, about the fens.

GENUS LI.

ALCA.

Bill short, compressed, convex, furrowed transversely, and not serrated.

1. IMPENNIS. GREAT AUK, NORTHERN PENGUIN, OR GAIR FOWL.

A. rostro compresso-ancipiti sulcato, macula ovata utrinque ante oculos. Lath.

The bill is $4\frac{1}{4}$ inches long and black, the space between the bill and eyes is occupied by a white spot; the head, back of the neck, and upper parts are covered with short, glossy, black feathers, except a white streak across the wing; the under side of the body is white; the wings are short; the legs black, short, and placed near the vent.

Length 3 feet.

The female lays one egg, which is white, blotched with dark rusty spots.

2. TORDA. } RAZOR-BILL, MURRE, FALK,
MARROT, OR SCOUT.

A. rostro sulcis quatuor, linea utrinque alba a rostro ad oculos (avis adulta.) Lath.

"The bill is black, strong, curved towards the

point, and sharply edged; the upper mandible is crossed with four transverse grooves, and the under one with three; the broadest of which is white, and forms a band across them both; the inside of the mouth is yellow; the base of the bill is feathered, and marked with a narrow white streak extending to the corner of the eye; a white bar crosses each wing obliquely; the upper part of the head, hinder part of the neck, back, rump and tail-coverts, are of a soft glossy black, and look something like velvet; the cheeks, chin and throat, are of a dull sooty black; legs black."

Weight 22oz. length 18 inches.

The female lays one egg, of a greenish white colour, marked with dark spots: she makes no nest, but deposits it on the bare rock, like the rest of the species.

3. PICA.

TORDA β . OF LATHAM.

A. rostro lævi compresso unisulcato, corpore toto subtus apicibusque remigum posticarum albis.

The bill is smaller than in A torda, and smooth; inside of the mouth pale flesh colour; cheeks, chin and throat white; in other respects like A torda.

Weight 18oz. length 15 inches.

Var. bill furrowed, with a white line across each

mandible; mouth yellow; irides hazel; quills tipped with white. (*Montagu.*)

Var. feathers of the throat white.

We are much inclined to believe that this is no other than the razor-bill, in its different dresses: we have received them from Orkney at different seasons, and have had them exhibiting every variety which black and white could produce. It is a curious circumstance, that the black feathers of most northern birds change more or less to white in winter, and again assume their original black as spring approaches.

4. ARTICA. } PUFFIN, COULTERNEB, SEA-PAR-
ROT, POPE OR WILLOCK.

A. rostro compresso-ancipiti sulcato sulcis quatuor, oculorum orbita temporibusque albis, palpebra superiore mucronata.

The bill is compressed, triangular, sharp-pointed, red, at the base grey; crossed by furrows; the nostrils are narrow; the corners of the mouth are puckered; the eye-lids are callous, edges crimson; the irides are grey; the whole upper parts and collar black; the chin, chest and belly are white; the legs are orange.

The puffin is migratory and arrives about April on the coast.

She deposits her egg in a hole in the sand, and is assisted by her mate in the hatching.

5. ALLE. } LITTLE AUK, GREENLAND DOVE, OR
SEA-TURTLE.

*A. rostro lævi conico, abdomine toto subtus remi-
gumque posticarum apicibus albis, pedibus nigris.*

Lath.

The bill is short and black, thick, strong and convex; feathered half way to its point; the crown of the head is flat and black; plumage above black, beneath, and the tips of the lesser quills are white; the scapulars are black and white; the legs and feet scaly; the webs black.

The female lays one bluish white egg.

GENUS LII.

URIA.

Bill slender, pointed; the upper mandible slightly bending towards the end; base covered with short feathers; nostrils lodged in a hollow near the base; tongue slender, almost the length of the bill; legs furnished with three toes, all placed forwards and webbed.

1. TROILE. } FOOLISH GUILLEMOT, WILLOCK,
SKOUT, KIDDAW, SEA-HEN OR
LAVY.

U. corpore nigro, pectore abdomineque niveo, remigibus secundariis apice albis.

The bill is bluish black; the mouth yellow; irides hazel; tips of the small quills, breast and belly are white; the rest deep mouse colour.

Length 17 inches; weight 24oz.

The female lays one egg which varies in colour, being blue, sea-green or whitish irregularly spotted and streaked with black.

2. MINOR. }
TROILE, β . LATH. } LESSER GUILLEMOT.

U. supra nigra, subtus genis fasciaque alarum alba.
Lath.

Above dark, dusky, inclining to lead colour beneath; and the tips of the secondaries white; the legs are black blushed with red.

Length 16 inches; weight 19oz. breadth 26 inches.

2. GRYLLE. } BLACK GUILLEMOT, GREENLAND-
DOVE, TYSTE OR SEA-TURTLE.

H. corpore atro, tectricibus alarum albis. Lath.

The bill is black, slender and pointed; inside of

the mouth is red; a large white spot in each wing; the small quills are tipped with white; the rest of the plumage sooty black; the legs and feet are red; the claws black.

Var. wholly black.

The female lays one egg which is of a grey colour.

GENUS LIIL.

COLYMBUS.

Bill straight, slender, pointed; nostrils linear, at the base of the bill; legs near the tail; feet webbed.

1. GLACIALIS. { GREAT NORTHERN DIVER, LOON
EMBER GOOSE.

C. capite colloque nigro-violaceo, facia gulæ cervicisque alba interrupta. Lath.

The bill is 4 inches and a half long, and black; the head is black, glossed with green; a semilunar white spot on the back of the neck and under the throat; the plumage is black spotted with white.

Length 3 feet 6 inches; breadth 4 feet; weight 16lbs.

The female is brown on the under side, and more indistinctly marked.

The female lays 2 dirty white eggs.

2. IMMER. IMBER, GREAT DOUCKER.

C. corpore supra nigricante albo undulato subtus toto albo. Lath.

The bill is four inches and a quarter long; of a dark brown colour; the irides are redish; above dusky, speckled with white and ash colour; the breast and belly silvery white; primaries and tail black; the legs dirty lead colour.

Length 3 feet; breadth 3 feet 8 inches.

The lesser imber (*of Bewick*) is the female.

She forms her nest amongst tufts of grass and lays 3 large eggs of a dark olive colour, spotted with black. (*Wer. Trans. vol. 2. p. 232.*)

3. STELLATUS. } SPRATLOON, SPECKLED
DIVER OR LOON.

C. cinereo-fuscus lineolis albidis varius subtus albus, capite et collo superioribus cinereis, pennis ad latera cinereo-albo fimbriatis. Lath.

The bill is about three inches long a little turned up, of a light colour; plumage above grey, speckled with white; beneath wholly white; the tail consists of 20 black feathers, some tipped with white; feet finned.

Length 2 feet 4 inches; breadth 3 feet 4 inches.

The female lays two dingy stone coloured eggs.

4. SEPTENTRIONALIS. } RED THROATED DI-
VER, OR LOON.

C. corpore supra nigricante subtus albo, collo antice macula scutiformi ferruginea.

The bill is dark; irides are red; the throat is dull

red; plumage above grey, spotted with white, beneath silvery white; the legs are dark.

Weight 3lbs. length 2 feet; breadth 3 feet 5 inches.

The female forms a nest of moss and herbage lined with down, and deposits 2 dingy bluish white eggs, spotted with dusky.

5. ARCTICUS. BLACK THROATED DIVER.

C. capite cano, collo subtus atro-violaceo, fascia alba interrupta. Lath.

The head, throat, and front of the neck are black, changing to glossy purple and green; the hinder part of the head and neck are ash colour; the upper parts are black spotted with white; the under parts are white; the tail is black; the legs dark reddish inside.

GENUS LIV.

STERNA.

Bill strong, slender, pointed, nostrils narrow on the base of the bill; tail forked; feet webbed.

(MIGRATE.)

1. ANGLICA. TERN.

“ The bill is $1\frac{1}{2}$ inch long, thick, strong and angulated on the upper mandible like the bill of a gull, and wholly black ; the head is black ; the legs are two inches in length from heel to knee ; claws straight.”
(*Montagu.*)

2. BOYSII. SANDWICH TERN.

S. alba, dorso alisque canis, pileo nigro, fronte maculis albis, remigibus nigricantibus scapo albo.
Lath.

The bill is two inches long, slender and almost regularly subulate, black with a horn coloured tip ; the head is black, spotted with white on the forehead and part of the crown hoary lead colour ; legs black with a slight rufous tinge ; foot small, and claws remarkably hooked.

3. DOUGALLII. ROSEATE TERN.

The bill is slender, slightly curved, jet black except at the base which is bright orange ; the legs and feet are bright orange ; the claws are black and hooked.

Length $15\frac{1}{2}$ inches.

Found on Cumbrey Islands, Milford Bay. (*Montagu.*)

4. MINUTA. LESSER TERN.

S. cauda forficata, corpore albo, dorso cano, fronte superciliisque albis. Lath.

The bill and legs are yellow ; the tip of the bill is black ; the crown is black, divided by a white spot on its brow ; above grey ; beneath white of exquisite gloss and softness ; the tail is white.

Weight 2oz. length $8\frac{1}{2}$ inches.

The female lays dirty brown eggs, spotted with red.

5. FISSIPES. BLACK TERN.

S. cauda emarginata, corpore nigro, dorso cinereo.
Lath.

The bill, head, neck, breast and belly are dull black ; the back, wings, and tail of a deep ash colour ; the vent and the exterior feather of the tail are white ; in the male a white spot on the throat ; the legs are dusky red, the webs depressed in the middle.

The female lays 3 or 4 dirty green eggs, spotted and encircled with black.

6. HIRUNDO.
NÆVIA, Syn.
OBSCURA.

} GREAT TERN, OR SEA-
SWALLOW.

S. cauda forficata rectricibus duabus extimis albo nigroque dimidiatis. Lath.

The bill and feet are crimson; the crown and tip of the bill black; plumage above grey, beneath white.

Weight 4oz. length 14 inches.

The female lays 3 or 4 dull olive eggs, marked with black spots at the thicker end.

GENUS LV.

LARUS.

Bill straight, sharp and edged, hooked at the end, a knob on the lower mandible; nostrils are narrow, placed in the middle of the bill; feet webbed.

1. MARINUS. BLACK-BACKED GULL, OR GREAT
BLACK AND WHITE GULL.

L. albus, dorso nigro. Lath.

The bill is pale yellow, strong, with a red spot and a black centre on the lower mandible; the irides

are yellow; the edges of the eyelids are orange; the back and wings are black, all the rest white; the legs are pale flesh colour.

The length is 29 inches, and weight 5lb.

The female lays dark olive eggs, marked with dusky spots, and quite black at the thicker end.

2. FUSCUS. }
NÆVIUS. } HERRING GULL.

C. albus, dorso fusco, pedibus flavis. Lath.

The bill is yellow; the angle of the lower mandible is orange; irides are pale yellow; edges of the eye-lids red; the back and wing-coverts bluish ash colour, the rest white; legs pale red.

Weight 30oz. length 23 inches.

WAGEL, OR BURGO-MASTER.

The bill is black; irides dark blue; plumage ash coloured, brown and white; legs dirty white, sometimes blushed with red.

These gulls are two or three years in arriving at their full colour; hence has arisen the different opinions of authors: the latter we have no doubt is the young of the herring gull.

3. CANUS.
HYBERNUS, Syn. } COMMON GULL, OR MEW.

L. albus, dorso cano, remigibus primoribus extremitate nigris, quarta et quinta macula apicis nigra, extima extus nigra. Lath.

The bill is pale yellow, tinged with green; irides hazel; the edges of the eye-lids red; the back, scapulars, and wings are bluish grey; the throat, rump, tail, and under parts are pure white; the quills are tipped with black.

WINTER GULL, OR BODDY NODDY.

The bill is whitish, the tip black; irides hazel; the back is grey; coverts of the wings brown; a black bar across the tail, the rest is white.

Weight 15oz. length 18 inches.

The female lays 2 olive-brown eggs, marked with reddish blotches.

4. RIDIBUNDUS.
CINERARIUS, Syn. } BLACK-CAP, OR PEWIT
ERYTHROPUS. } GULL.
OBSCURUS.

L. albidus capite nigricante, rostro pedibusque rubris.
Lath.

The bill is red; the irides are hazel; edges of the

eye-lids red; the head is black; the back and wings pale lead or ash colour; the neck, tail, and under parts are pure white; the quills vary—black, white, or ash colour; the legs are red.

The female lays 3 or 4 olive-brown eggs, blotched with rusty red.

In th 7th vol. of *Lin. Trans.* is a paper on the changes which this gull undergoes.

5. RISSA.

TRIDACTYLUS, Syn. } KITTIWAKE, OR AN-
NETT.

L. dorso canescente, reatricibus albis, digito postico mutico. Lath.

The bill is greenish yellow; inside of the mouth and edges of the eye-lids are orange; irides dark; the head, neck, and under parts, together with the tail, pure white; the back and wings are lead colour, tips of the quills are black; the legs are dusky, having a small protuberance instead of a black toe.

The female lays 2 dingy greenish eggs, spotted with brown.

6. CATARRACTES. SKUA, OR BROWN GULL.

L. grisescens, remigibus reatricibusque basi albis, cauda subæquali. Lath.

The bill is strong, much hooked, and sharp at the

tip; cere black; plumage deep brown, edged with rust colour; the under parts are lighter; the legs and toes are covered with black scales; the claws are strong and hooked, the inner one more so than the rest.

Length 2 feet.

This species is a bird of prey, devouring all the smaller species of water-birds, and even young lambs.

It is found in Orkney.

7. PARASITICUS. } ARCTIC GULL, FEASER, OR
LONG-TAILED LABBE.

CREPIDATUS, Syn. } DUNG-BIRD, OR BOAT-
SWAIN.

L. supra niger, collo pectore et abdomine albis, rectricibus duabus intermediis longissimis. Lath.

The bill is dusky, hooked, and furnished with a cere; the head is black; the back, wings and tail dusky; beneath white; the tail of twelve feathers; the two middle ones are four inches longer than the others; the legs are black and scaly.

The female is entirely dark brown, the two middle tail-feathers two inches longer than the others.

Var. head, neck and throat buff colour; the legs are yellowish.

The female composes her nest of dry grass, and lays eggs of a light brown colour, marked irregularly with dark brown blotches.

This has been called dung-bird, from its watching the smaller species of gull, and so soon as they have taken any food, they pursue and attack them with the fury of a bird of prey, and compel them to disgorge it, when this pursuer catches it commonly before it reaches the water.

8. ARGENTATUS.

VAR. β . MARINUS. LATH.

} SILVERY, OR LESS
BLACK-BACKED
GULL.

*L. albus, dorso alisque canis, remigibus primoribus
versus apicem nigris.*

The bill is yellow, with an orange spot on the lower mandible ; the irides are pale yellow ; the orbits red orange ; the head, neck, tail, and whole under parts are pure white ; the back, scapulars and wings are dusky black ; the prime quills are dusky, towards their ends black ; the point of the first is white, with a black tip ; the second the same, with only a white spot in the black ; the others are slightly tipped with white ; two or three of the scapulars are also tipped with white ; the legs are yellow. (*Montagu.*)

9. ATRICILLA. LAUGHING GULL.

*L. albus, capite nigricante, rostro rubro, pedibus
nigris. Lath.*

The length is about 18 inches : it is larger than the black-headed gull, and differs only from that

bird in the legs, which are black; the bill is also stronger, and the head larger.

10. MINUTUS. LITTLE GULL.

L. niveus, capite nigro, alis leucophæis, pedibus coccineis. Lath,

The bill is reddish brown; irides bluish; the head and beginning of the neck are black; the rest of the neck and under parts of the body are white; the back, scapulars, and wing-coverts cinereous-grey; tail wholly white, and even at the end; the legs are red.

Length 10 inches. (*Montagu.*)

GENUS LVI.

PROCELLARIA.

Bill compressed, hooked at the end; nostrils tubular; back toe sessile.

Spout oil from their bills.

MIGRATE.

1. GLACIALIS. MALLEMOKE, OR FULMAR.

P. albicans, dorso canescente, rostro pedibusque flavicantibus. Lath.

The bill is yellow at the truncated end, the rest is grey, in some specimens blushed with red; the

nostrils are contained in one sheath, divided into two tubes; the head, neck, under parts and tail white; the back and wing-coverts are grey; the quills dusky blue; and the legs yellowish red.

These birds are greedy and gluttonous, often following wounded whales; and when the animal can no longer sink, they alight upon it, and devour lumps of blubber until they can hold no more: they rarely visit the shore unless in the breeding season. The females lay eggs, which are white, in holes on the coast, and are assisted by the males in the process of incubation: it is said they then croak like frogs.

2. PUFFINUS. SKRABE, LYRE, OR SHEAR-WATER.

P. corpore supra nigro subtus albo, pedibus rufis.
Lath.

The bill is yellowish, tipped with black; the inner wing-coverts, and under parts of the body white; the head, tail, thighs, and upper parts are black; the legs are weak, compressed, whitish before, and dusky behind.

Length 15 inches.

They breed on the south end of the Isle of Man, in rabbit-holes.

The female lays one egg.

3. PELAGICA. STORMY PETREL.

P. nigra, uropygio albo.

The bill and upper parts of the plumage are black, sleek, and glossed with bluish reflections; the brow, cheeks, and under parts sooty brown; the rump and vent white; the legs are black; the wings are very long.

The size of the swallow.

The female lays one white egg, spotted with purplish brown at the larger end.

 GENUS LVII.

MERGUS.

Bill slender, a little depressed, furnished at the end with a crooked nail; edges of each mandible very sharply serrated; nostrils near the middle of the mandible small and suboval; toes three before webbed, the outer one the largest; the hind toe furnished with a fin.

1. MERGANCER. GOOSANDER OR JACK-SAW.

*M. subcristatus albus, capite collo supremo dorso
remigibusque nigronitentibus, canda cinerea.*
Lath.

The bill is three inches long, black on the upper part and crimson on the sides; the irides are red; the head is covered with feathers, which are erected as a crest, bottle green; the neck, breast and belly are pale yellow; the upper part of the back and scapulars are black; the middle of the rump and back ash colour; the tail consists of 18 feathers; the legs are scarlet, like red sealing wax.

The female has the head ferruginous; the back and tail ash colour.

The labyrinth or bony process on the wind-pipe is situated just above where the trachia divaricates to supply the lungs, and has been compared by Willoughby to two powder puffs.

The female has no labyrinth.

2. CASTOR. DUN DIVER OR SPARLING FOWL.

M. cristatus cinereus, capite colloque supremo spadiceis, gula remigibus intermediis abdomineque albis. Lath.

The lower mandible and irides are red; the head and upper part of the neck are deep chesnut; the

crest of a deeper shade; the throat and belly white; the back, scapulars, coverts of the wings, rump and sides of the body bluish ash or lead colour; the fore part of the neck, breast, belly and vent are yellowish white; the wings are black and white; the legs are orange red.

3. SERRATOR. RED BREASTED MERGANCER.

M. crista dependente, pectore rufescente variegato, collari albo, rectricibus fuscis cinereo variegatis.

Lath.

The upper mandible is dark brown, tinged with green and edged with red; the lower one is wholly red; the irides are deep red; the head, pendent crest and upper parts of the neck glossy violet black; the rest of the neck and belly white; the breast is orange red, spotted with black; the upper part of the back is glossy black; the rump and sides are brown and pale grey; the wings are white and black; the tail short and brown; the legs and feet deep saffron red.

Vary much in plumage.

The labyrinth much like the Mergancer.

3. ALBELLUS.

MINUTUS, Syn.

} SMEW OR WHITE NUN.

M. crista dependente, occipite nigro, corpore albo, dorso temporibusque nigris, alis variegatis. (mas.)

Lath.

The bill is dusky blue; irides dark; a green glossy

patch over each eye, the under side of the crest is black; the head, neck, breast, belly and vent are white; the wings are black and white; the tail of 16 feathers; the legs and feet bluish lead colour.

Labyrinth nearly like the other species.

The covering of birds (Dr. Paley observes) cannot escape the most vulgar observation. Its lightness, its smoothness, its warmth; the disposition of the feathers all inclined backward, the down about their stem, the overlapping of their tips, their different configuration in different parts, not to mention the variety of their colours, constitute a vestment for the body, so beautiful, and so appropriate to the life which the animal is to lead, as that, I think, we should have had no conception of any thing equally perfect, if we had never seen it, or can now imagine any thing more so.

Natural Theology.

GENUS LVIII.

ANAS.

Bill broad, depressed; the end furnished with a

The whole of this genus is furnished with a powerful muscular stomach or gizzard.

Birds are furnished, for the purpose of cleaning their feathers, laying them straight, and in some measure rendering them impervious to wet, with a gland near the rump, which secretes an oily fluid, and which when wanted the bird readily obtains by erecting the tail coverts, and squeezing with its bill a nipple-like process; this gland is very conspicuous in the Anseres.

horny substance termed a nail; the edges of the mandibles pectinated; nostrils small oval; tongue broad, fringed at the base; toes three before webbed; one behind.

1. CYGNUS. } WHISTLING SWAN, WILD SWAN,
ELK OR HOOPER.

A. rostro semicylindrico atro, cera flava, corpore albo. Lath.

The bill is yellowish at the base, with a black tip; the cere is yellow; the whole plumage is of a pure snowy white; near the skin cloathed with a thick down; the legs and feet are of a brown black.

The female lays 6 or 7 large white eggs, in a nest composed of withered leaves, reeds and rushes.

The trachia or wind-pipe passes down the neck, the whole of its length; after which it enters the keel of the sturnum, passing backwards, therein the whole of its length, when it bends upwards and forwards and then enters the cavity of the breast to communicate with the lungs. (*See a valuable paper in the 4 Vol. of the Lin. Trans. by Dr. Latham.*)

2. MANSUETUS. MUTE OR TAME SWAN.

A. rostro rubro, basi tuberculo carnosio nigro, corpore albo. Lath.

The bill is tipped with black, and having on the
D d

upper mandible a black tubercle ; cere is black ; the plumage is snowy white ; the feet are lead colour. It is larger than the wild swan.

The female lays 6 or 8 white eggs.

On dissection, the trachia exhibits no peculiar structure.

3. CYGNOIDES. SPANISH GOOSE.

A. rostro semicylindrico, cera gibbosa, palpebris tumidis. Lath.

The bill is orange ; the irides are reddish brown ; the root of the upper mandible is furnished with a large protuberance ; also a whattle under the throat ; a dark brown stripe runs down the hinder part of the neck from the head to the back ; the forepart of the neck, and the breast are yellowish brown ; the back and all the upper parts are grey ; belly white ; legs orange.

Var. bill and legs black, &c.

(DOMESTICATED.)

4. CANADENSIS. CANADA GOOSE.

A. cinerea, capite colloque nigris, genis gulaque albis.
Lath.

The bill is black ; the irides are hazel ; the head and the neck are black, with a white crescent on the

latter; the upper parts are dull brown; the belly, vent and upper tail-coverts are white; the quills and tail are black; the legs are dingy blue.

(DOMESTICATED.)

5. ÆGYPTIACA. EGYPTIAN GOOSE.

A. rostro subcylindrico corpore undulato, vertice albo, speculo alari candido fascia nigra. Lath.

The bill is red; the tip black; the irides are pale yellow; the eyelids red; the throat and upper part of the head white; a rusty coloured spot surrounds the eye; the neck is pale reddish bay; the breast chesnut; the wing-coverts white; the greater ones barred near their tips with black; the back, rump and tail are black; a short blunt spur on the bend of the wing.

(DOMESTICATED.)

6. RUFICOLLIS. RED-BREASTED GOOSE.

A. supra nigra, collo rufo, corpore subtus macula ante oculos strigaeque longitudinali colli utrinque albis. Lath.

The bill is short, brown, with the nail black; irides yellowish hazel; cheeks and brow dusky; the chin, throat, crown of the head, and back of the neck are black; two stripes of white fall from be-

hind each eye ; the upper part of the breast is dusky red ; the back and wings are dusky ; the sides and lower part of the breast are black ; the belly and tail-coverts white ; the legs dusky.

7. ANSER. GREY LAG-GOOSE, OR WILD GOOSE.

*A. rostro semicylindrico, corpore supra cinereo sub-
tus pallidiore, collo striato. Lath.*

The bill is yellow, with a white nail ; the general plumage is grey ; the secondaries black ; the vent and tail-coverts snowy white ; the legs flesh colour.

The length is 2 feet 9 inches.

Origin of the domestic goose.

8. SEGETUM. BEAN-GOOSE, OR SMALL
GREY GOOSE.

*A. cinereo-fusca subtus albida, alis griseis, tectrici-
bus majoribus remigibusque secundariis apice
albis. Lath.*

The bill is orange, except the nail, which is black ; the irides are rufous-brown ; the head, neck, and under parts as far as the legs are cinereous brown ; the forehead is speckled with white, behind which the feathers are dusky brown ; (a callous knob upon the elbow of each wing) the back ash colour ; the lower

part of the belly, and the upper and under tail-coverts are white; the scapulars are brown ash colour, edged with white; the greater quill-feathers are black; the exterior webs are grey; the secondaries cinereous-grey, margined with black on the outer webs; the coverts are grey, the larger ones are tipped with white; the legs are dull orange. (*Montagu.*)

9. ALBIFRONS. LAUGHING GOOSE.

A. cinerea, fronte alba. Lath.

The bill is yellow red, nail white; from the base of the bill and corners of the mouth a white patch extends over the forehead; the head, neck, and upper parts are dark brown; the breast and belly are dirty white, spotted with dusky; the tail is of a hoary ash colour, with a white ring at the base; the legs are yellow.

10. BERNICLA. BRENT GOOSE.

A. fusca, capite collo pectoreque nigris, collari albo.
Lath.

The bill is about $1\frac{1}{2}$ inches long and black; the irides are light hazel; the head, neck, quills and

legs are black; the breast, scapulars, and wing-coverts are ash colour.

Length nearly 2 feet.

11. ERYTHROPUS. BERNACLE, OR CLAKIS.

A. cinerea supra nigro alboque undulata, collo nigro, facie abdomineque albis. Lath.

The bill is short, black, with a reddish streak on each side; the irides are brown; the head is small, forehead and cheeks white; back part of the head, neck and shoulders are black; the back is grey; the belly is white; the tail and legs are black:—there is also a callous protuberance, or blunt spur upon the elbow of each wing.

Length about 2 feet.

12. MOLLISSIMA. EIDER DUCK.

A. rostro cylindrico, cera postice bifida rugosa.
Lath.

The head is large; the middle of the neck is small; the bill is dark horn colour; the upper mandible is forked towards each eye, and covered with white feathers as far as the nostrils; the irides are dark yellowish; the head is a soft velvet black, divided by a dull white stroke; the neck has the appearance of a green stain on each side; the upper part of the

neck and lesser wing-coverts are white; the scapulars and secondaries dirty white; the bastard-wings and greater coverts brown; the lower part of the neck is buff colour; the breast, belly and rump are black; legs short and yellow; webs dusky.

The length is about 2 feet, weight 6 or 7lb.

The female is less than the male, of a reddish brown colour, waved with black.

She lays from 3 to 5 pale olive-coloured eggs, in a nest composed of bent grass and sea-weed, and lined with a large quantity of the soft down plucked from her breast.

The down is a valuable article of commerce in the northern countries. It is not uncommon for two females to deposit their eggs in the same nest, and mutually to assist in the process of incubation.

13. MOSCHATA. MUSK, OR MUSCOVY DUCK.

A. facie nuda papillosa. Lath.

The bill is 2 inches long, red, tipped with brown; the cere is knotty and red; irides dark; the crown of the head is black; the cheeks, and fore-part of the neck are white; the general colour of the rest of the plumage is brown, glossed with green, on the back, rump and quills; the feet are short and red.

Length about 2 feet.

Domesticated: vary much in plumage,

14. FUSCA. VELVET DUCK.

A. nigricans, palpebra inferiore speculoque alarum albis. Lath.

The bill is broad and short, the sides yellow, hook red, and a tubercle at the base; irides whitish; the plumage is sooty black, with a white spot behind each eye, and on each wing; the legs are red, the nails black.

Length 21 inches.

The female has no protuberance at the base of the bill; a white spot behind the ears; the plumage inclined to brown.

Larynx consists of an oblong bony cavity of an inch in length, situated just below the larynx, about the size of a walnut.

15. NIGRA. SCOTER, OR BLACK DIVER.

A. rostro basi gibbo, corpore toto nigro. Lath.

The bill is black, with a bright yellow stripe down the upper mandible, and a process at the base; irides are dusky; the plumage is black; the tail of 16 feathers; the legs are brown.

The female has the bill wholly black, without the knob; the upper parts are dusky brown; the chin,

cheeks, throat, and sides of the upper part of the neck are sullied white, freckled with brown; the scapulars are tipped with cinereous; the whole under parts are mottled with dirty white and brown; the fore-part of the legs and toes are dull olivaceous-yellow; the hind-part and webs are dusky. (*Montagu.*)

The length is about 22 inches.

16. BOSCHAS. MALLARD, OR WILD DUCK.

A. cinerea, reatricibus intermediis (maris) recurvatis, rostro recto, torque alba. Lath.

VAR. β DOMESTICA. TAME DUCK.

Variat corpore versicolore.

VAR. ζ ADUNCA. HOOK-BILLED DUCK.

The bill is yellow green; the irides dark; the head and neck of a rich glossy green, the latter encircled by a white collar; the neck, breast and shoulders are of a deep chesnut; the scapulars are silvery white, barred with brown; the wing-coverts are ash-colour, crossed by a rich glossy purple; the belly is of a pale grey, pencilled with dusky lines; the back and rump are black, glossed with green; the tail of

24 feathers, the four middle ones stiff, and curled up; the legs are red.

The length about 21 inches.

The female is plain brown, except the spot on the wings.

She lays from 10 to 16 greenish-white eggs.

Labyrinth globular, flattened at the bottom, and furrowed and wrinkled on its surface.

17. MARILA. SCAUP DUCK.

A. nigra, humeris cinereo-undulatis, abdomine speculoque alari albis. (mas). Lath.

The bill is broad and flat, of a lead colour, with a black nail; irides are bright deep yellow; the head and neck are black, glossed with green; the breast and tail are plain black; the back is grey, delicately pencilled with waved lines; the lesser quills are white, tipped with black; the belly is white; tail fan-shaped, of 14 brown feathers; the legs are pale blue.

Length about 23 inches.

Vary much in size and plumage.

Labyrinth compared to the head of a drum, being flattened on one side.

18. TADORNA. SHIELDRAKE.

A. rostro fimo, fronte compressa, capite nigro-virescente, corpore albo variegato. Lath.

The bill is red, the nail and nostrils black, turned a little upward, with a tubercle at the base; the head and upper part of the neck are fine bottle green, the feathers forming a sort of crest on the back of the neck; the lower part of the neck and back are white; the breast and shoulders are orange; the belly is white, divided by a black line; the tail-feathers are white, tipped with black; the legs are pale red.

Length about 2 feet, weight 2lb. 10oz.

The female is less, and not so brilliant in her plumage.

She builds in holes on the sea-shore, and forms her nest of the down plucked from her breast: the eggs are 12 to 16, roundish, white.

The labyrinth is long, and of equal dimensions; above the divarication are two roundish bladders.

19. CLYPEATA.

RUBENS, Syn.

MUSCARIA, LIN. VAR.

} SHOVELER.

A. rostri extremo dilatato rotundato, ungue incurvo. Lath.

The bill is 3 inches long, black and rounded at

the end like a spoon, the nail is hooked inwards; irides are fine yellow; the head and neck green; breast and scapulars white; back brown; the belly and sides chesnut-bay; the wing-coverts are pale sky-blue; the tail of 14 feathers; the exterior ones white; those in the middle black edged with white; the vent-feathers are black; the legs and feet are red.

Weight about 22oz. length 22 inches.

The female is less brilliant; white, grey and rusty, crossed with curved dusky lines.

The female lays 10 or 12 rust coloured eggs.

Labyrinth small and oval; on the left side is a long bladder, about the size of a large rounceval pea. (*Latham.*)

20. STREPERA. GADWALL, OR GRAY.

A. speculo alarum rufo nigro albo.

The bill is flat, black, and about two inches long; irides light hazel; the head is rufous-brown, spotted with black; the breast, back and scapulars are marked with black and white lines; the belly and thighs are dirty white; the rump and vent are black; the tail ash colour, edged with white.

The female has the breast plain brown, spotted with black.

The length 19 inches.

Labyrinth oval, compressed on the sides.

21. PENELOPE. WIGEON

A. cauda acutiuscula, crisso nigro, capite brunneo, fronte alba, dorso cinereo undulato. Lath.

The bill is lead colour, tipped with black ; the crown of the head is cream colour ; the rest of the head, neck and breast are bright rufous chesnut, obscurely freckled with black spots ; the back is waved with black and white ; the breast purplish ; the belly white ; vent black ; the tail of 14 feathers, the two middle ones are black, the rest ash colour.

Its length 20 inches ; weight 23oz.

The female is paler and more brown.

The young of both sexes are grey, and continue in that plain garb until February, when a change takes place ; the male assuming a rich colouring which continues until July.

The labyrinth is more globular than in the pintail duck.

Wigeons fly in small flocks during the night, and are distinguished by their whistling note.

22. GLOCITANS. } BIMACULATED OR CLUCKING
DUCK.

A. subcristata fusca nigro undata, capite viridi, macula ante poneque oculos ferruginea, pectore maculis nigris, speculo alarum viridi albo marginato. Lath.

The bill is deep lead colour ; nail black ; irides

brown; crown brown green; with a small crest; head brown and grey, spotted with ferruginous; throat fine deep purple; the neck is dark brown, waved with black; the wing-coverts are ash colour; the tail of 12 feathers, the two middle ones black, the remainder brown edged with white; belly is dusky, finely granulated; the legs are small, yellow with dusky webs. (*Latham.*)

The length is 20 inches.

23. AFRICANA. AFRICAN TEAL.

Mr. Bullock mentions (*in the Lin. Trans. vol. 11.*) that the African Teal has been taken in Lincolnshire.

24. FERINA. { POKER, POCHARD OR RED HEAD- ED WIGEON.

A. cinereo-undulata, capite brunneo, fascia pectorali crisso uropygioque nigro. Lath.

The bill is dark lead colour; tip black; irides deep yellow; the head and neck are bright bay; the breast and upper part of the back fine black; plumage above grey, with black lines; the belly is ash colour, shaded and dashed with black.

The length is 19 inches; weight about 2lbs.

The female has the head reddish brown; the

breast deeper; and the wing-coverts plain ash colour.

Labyrinth drum-like, divided by a small bony partition.

25. ACUTA. { PINTAIL, SEA-PHEASANT, OR
CRACKER.

A. cauda acuminata elongata subtilis nigra, occipite utrinque linea alba, dorso cinereo undulato. Lath.

The bill is black with blue edges; irides are reddish brown; the head and throat are rusty brown, mottled with dark spots and tinged with purple; the nape of the neck is dusky, margined by a white line; the breast and back are pencilled with black and white waved lines; the scapulars are long and pointed; the feathers white, with a black stripe down the middle; the wing-coverts are ash brown, tipped with orange; the beauty spot is bronze purplish green; the tail feathers are brown ash colour; the two middle ones black; the legs are lead colour.

The length is about 28 inches; weight 24oz.

The female is browner; the middle tail feathers not longer than the rest.

Labyrinth about the size of the end of the thumb.

26. GLACIALIS.

HYEMALIS, LIN. (fem.)

LONG TAILED
 DUCK OR SWAL-
 LOW TAILED
 SHELDRAKE.

A. cauda acuminata elongata, corpore nigro, subtus albo. (mas adultus.) Lath.

The bill is short, black at the base and tip, crossed in the middle by a band of orange red; irides light hazel; the head is pale reddish brown, and white, with an oval shaped black and chesnut patch on each side; the breast, shoulders and back are chocolate brown; the belly, vent and scapulars are white; the tail feathers white, the four middle ones black, two of them four inches longer than the others; the legs and toes are pale blue.

The female is more dusky, wanting the long tail feathers.

She lays 4 or 5 bluish white eggs, in a nest lined with a large quantity of her down.

It sometimes happens, as is the case with the Eider Duck, that two females lay in one nest and mutually assist one another in incubation.

They visit Orkney in October, in some which we dissected from thence, we found the crop and gizzard full of minute testaceæ.

27. CLANGULA. } GOLDEN EYE.
 GLAUCION, Syn.

A. nigro alboque varia, capite tumido violaceo, sinu oris macula alba. Lath.

Male. The bill bluish-black, short and thick; the head is large, of a glossy bottle green, with violet reflections; a large white spot is placed on each side the mouth; irides golden yellow; the back, tail and wing-coverts are black; the breast, belly and vent white; the legs are orange.

The length is about 19 inches; weight 2lbs.

Female. The head of the female is of a deep brown; neck grey; breast and belly white; coverts and scapulars dusky and ash coloured; tail black; and legs dusky.

Labyrinth. In this species an enlargement takes place in the middle of the *Trachia*, and consists of divers joints and plaits, placed obliquely and folding over each other, so as to admit of its being contracted into a very short compass, or dilated to a great distance, as the lengthening or shortning of the neck may require. (*Latham.*)

28. FERRUGINEA. FERRUGINOUS DUCK.

SYN. OLIVE TUFTED DUCK OF BRIT. MISCELL.

A. fusco-rufa, abdomine albo, rostro dilatato pedibusque pallide cæruleis. Lath.

The bill is rather long and deep at the base, flat-
 F f

tish at the point, of a dark lead colour, with the nail black; irides yellowish; head and neck small, of a dark ferruginous; the lower part of the neck behind, back, scapulars, coverts of the wings and upper coverts of the tail are dusky brown, with a slight tinge of ferruginous; on the chin is a spot of dirty white; the lower part of the neck before, and the whole breast is chesnut; the body white; feet and legs lead colour, claws black. (*Montagu.*)

29. FULIGULA. TUFTED DUCK.

A. crista dependente, corpore nigro, abdomine speculoque alarum albis. Lath.

The bill is broad, of a lead colour; the nail black; irides deep orange; the head is black, glossed with purple; the neck, breast and upper parts deep brown or black; the belly and middle quills are white; vent white, mixed with dusky; the legs are of a dark lead colour; webs black.

Length 18 inches; weight about 2lb.

The male has a pendent crest, overhanging the nape of the neck.

The female is of a browner colour; no crest.

Labyrinth drum-like.

30. QUERQUEDULA. GARGANEY.

A. macula alarum viridi, linea alba supra oculos.
Lath.

The bill is dark lead colour; the irides light hazel, a black spot on the chin; a white line from the corner of the eye; the cheeks and upper part of the neck pale purple, with small white lines; the breast is brown with black curved lines; the belly white; legs lead colour; exterior webs of the middle quills green.

The female has an obscure mark over each eye; plumage brownish ash; the wings want the green spot.

Labyrinth nearly oval, and placed perpendicularly, so as to appear as a continuation of the *trachia*, externally it is indented on one side, in which furrow a muscle passes, making it appear as divided into 2 unequal portions; on the opposite part, or that situated next the breast, it is flattened and from the upper part of it, the two *bronchiæ* have their origin. (Lath.)

31. CRECCA. COMMON TEAL.

A. speculo alarum viridi, linea alba supra infraque oculos. Lath.

The bill is dark lead colour, tipped with black;

irides light hazel; a glossy green patch, edged with pale brown and cream colour covers the eye; the rest of the head and upper part of the neck, shoulders, scapulars and belly are pencilled with black ash colour, and white transverse waved lines; the breast is pale brown, or reddish yellow, each feather tipped with a black spot; the belly is cream-coloured white; back and rump brown; vent black; a green and white spot on the wing; tail of 14 feathers; legs dirty lead colour.

The female is less; the upper mandible is yellow olive-green and brown; under mandible yellow; the green patch behind the eyes is wanting; the breast, belly, and vent are glossy yellowish white, spotted with brown.

Female lays 6 or 7 dull white eggs, marked with brownish spots; in a nest composed of dry grass, and pith of rushes.

Labyrinth as big as a pea on one side, and spreading on the opposite parts in a kind of convex shape; at the bottom of which the *bronchiæ* are attached. (*Latham.*)

GENUS LIX.

PELICANUS.

Bill straight, crooked at the end; no external nostrils; four toes connected by a membrane.

Stomach large, membranous, no gizzard.

The occipital bone is furnished with a long process to which the long muscles of the neck are attached.

(GREGARIOUS.)

1. CARBO. CORMORANT, OR CORVORANT.

P. cauda rotundata, corpore nigro, capite subcristato.

Lath.

The bill is ash colour, with a yellow naked skin round the base, extended under the chin, where it forms a pouch; irides bright green; head and neck black, a short pendant crest; all the upper parts are of a glossy blue-black, with green reflections; shoulders and wing-coverts bronze, tinged with green, and spotted with black; tail of 14 feathers, which are stiff; legs black; the middle claw is serrated.

The weight is 7lb. length 3 feet 4 inches.

Var. chin white; cheek and throat grey, &c.

The female lays 4 or more eggs, which are greenish-white.

May be domesticated. (See *Montagu's Supp. Orn. Dict.*

They feed principally on fish: several which we opened were full of young cole-fish. (*Gadus carbonarius.*)

2. GRACULUS. SHAG, OR GREEN CORMORANT.

*P. cauda rotundata, corpore nigro subtus fusco, re-
tricibus duodecim, rostro edentulo. Lath.*

The bill is ash colour; irides are green; the head of the male crested; upper parts dark green, shining like satin; the scapulars and wings are bronze brown, each feather edged with black; legs black.

It weighs about 4lbs. length 2 feet 6 inches.

Var. under parts glossy green, entirely grey, or blackish bronze.

The crop of *P. graculus* and *carbo* are often infested with a species of *ascarides*, first described by *Dr. Pulteney*, in the 5th vol. of the *Lin. Transactions*.

3. BASSANUS. GANNET, OR SOLAND GOOSE.

*P. cauda cuneiformi, corpore albo, rostro serrato, re-
migibus primoribus nigris, facie cærulea. Lath.*

The bill is lead colour, jagged on the sides; a long furrow on the upper mandible; irides pale yellow, surrounded by a blue skin; mouth black within; the skin under the chin, as well as the whole æsophagus, capable of great dilatation; the crown buff colour; the wings and legs black; the rest of the plumage

dirty white ; a stripe of pea-green runs down each leg, and branches along each of the toes.

Its weight 7lb. length 3 feet.

The young birds during the first year are very unlike their parents, being wholly dusky, spotted with white.

The female lays 3 white eggs, in a nest composed of grass and sea-weed.

The lungs and cellular portion under the skin of the gannet is capable of holding 180 cubic inches of air at one time, subject to the will of the bird. (*Phil. Trans. vol. 69. page 349.*)

The cellular membrane of the gannet is infested with an insect, which is described in the 1st vol. of the Trans. of the Werner. Society, under the name of *Cellularia bassani*.

Quam multiplicata sunt opera tua, Jehova ! omnia ipsa in sapientia fecisti : impleta est terra possessionibus tuis. Ps. civ.

APPENDIX.

Directions for preserving Birds for the Cabinet.

A VARIETY of methods have been used for the preservation of birds, each one possessing some advantage over the other. We will mention three, and leave it to the judgment of the operator to choose for himself.

Much of the beauty of stuffed birds depends upon their being well shot, as it is impossible to make a mutilated specimen look well: for the smaller species dust shot should be used, and for the larger ones ball shot from a rifle-gun:—so soon as one is killed, a little cotton-wool or tow should be laid upon the bleeding orifices or other wounds; the feathers should be laid straight, and a little tow wrapped round the beak and nostrils to absorb any moisture exuding from them; it should then be packed in hay, or cotton-wool, and in that manner conveyed home. In taking off the skin great care should be used not to soil the feathers; it should be laid upon a clean cloth, the feathers of the breast and belly being parted, an incision should be carried from the breast to the vent, in order to divide the skin; some prefer

opening under one wing ; and the *divers*, several of which have most beautiful silky breasts, may be opened down the back. The skin is readily separated from the flesh by the fingers, or other blunt instrument ; the thighs are to be pushed up, and denuded of flesh, and the bone broken about its middle, draw the skin over the body, and with great care remove the skin from the wings to the second joint, treat them in the same way as the thighs ; turn the skin over the head, and remove a portion of the skull, sufficient to allow of the brain being scooped out. The eyes may be removed from the inside, and as much flesh dissected from the skull as possible : when the process of skinning is finished, every particle of fat is to be removed, by scraping it off with some absorbent powder as chalk, and washing clean with a sponge and warm water ; every part is then to be covered with the powder, (a) solution, (b) or soap. (c.)

The first method of stuffing, and which we prefer

(a) Arsenic, or muriate of mercury and burnt-alum, of each half a pound ; tanners' bark, three pounds ; camphor, four ounces ; powder separately, and mix ; passing the whole through a fine sieve. To be kept in a tin canister.

(b) One ounce of muriate of mercury dissolved in eight ounces of spirit of wine.

(c) Five ounces of camphor ; arsenic and white soap, each two pounds ; sub-carbonate of pot-ash, twelve ounces ; lime in powder, four ounces.

for small birds, is to pass a sharpened wire, according to the size of each leg, and then to fill every part of the skin with cotton-wool, carefully avoiding any unnatural distention; gradually moulding the bird into form as it dries, and supporting it in its position by wool on every side until thoroughly dry, and ready to be affixed to the branch or board in the cabinet.

The second method, which answers remarkably well in strong skinned birds, is to first wrap the bones of the wings with a little tow, and return them into their position; then cut three pieces of nealed iron-wire, suitable to the size of the species; sharpen the ends, and pass one through the skull, making an artificial neck, exactly the size of the one removed, of tow, or fine hay, and wrapped firmly round with string; the other two wires are then to be passed up the legs, and the thighs made in the same way as the neck; an artificial body is then to be formed, and placed in the cavity, thrusting the wires of the neck and thighs into their proper direction, firmly fastening them, by twisting the wire into the body.

The last and more common method is to pass wires up the legs, and through the head; also into the wings, making a sort of frame-work in the body, and then filling the skin with tow, or cotton-wool.

Whatever plan is adopted, it is necessary in sewing them up, to pass the needle from the inside outwards, otherwise the feathers are displaced, and the specimen much disfigured. In order to resemble

life, glass-eyes (*d*) are to be chosen as near the natural ones in colour and size as possible, and fixed in with glazier's-putty, or a paste made of flour and water, with a little arsenic.

(*d*) We have procured most beautiful and well made glass-eyes from Mr. Grey, No. 1, Orchard Street, St. Lukes, near Iron-monger Road, London.

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